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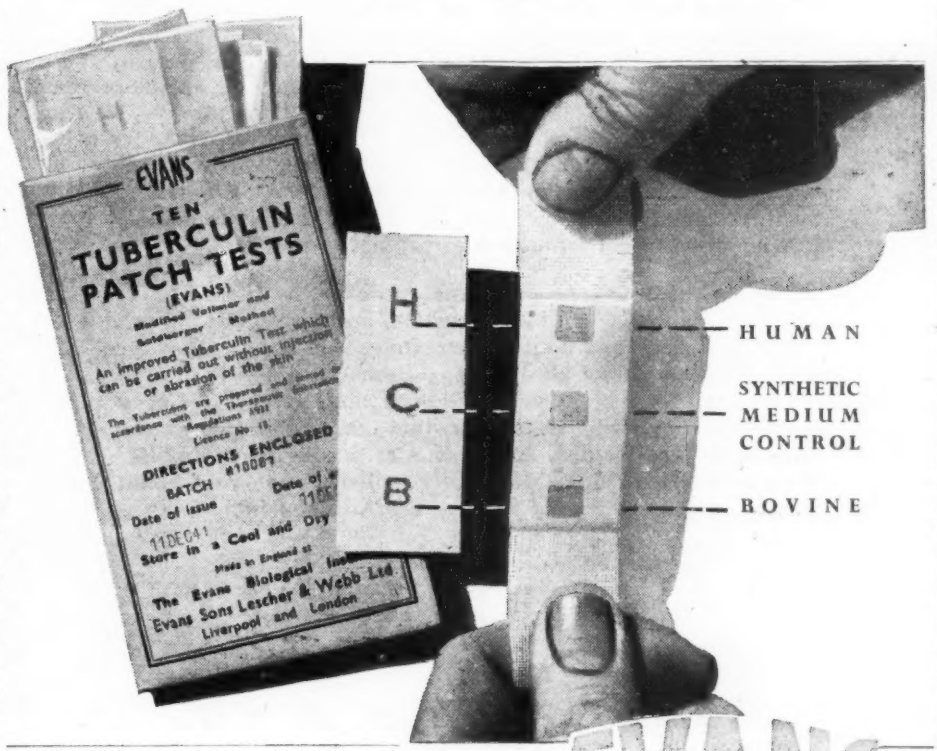

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M.CHIR. CAMB., F.R.C.S.
ORTHOPÆDIC SURGEON TO THE MIDDLESEX HOSPITAL

THE results of the treatment of crush fractures of the os calcis are rotten. They bear no relation to the accuracy with which the fractures are reduced. With few exceptions the result of Böhler's method of reduction and fixation in plaster is a permanently stiff and painful foot on which no man can do a day's work or indulge in any form of sport or exercise. The reason for this is clear. Any severe injury of a foot, even a bad sprain, which is immobilised in plaster for four months will result in a stiff and painful foot; the movements of inversion and eversion will be limited or abolished, and, since these movements are required for normal use of the foot, walking will be difficult and painful, especially on uneven ground. And when to this is added the trauma of a fracture involving the subastragaloid joint, traumatic arthritis follows and completes the crippling of the patient. So it often happens that after a year or more of continuous disability the patient is advised to have a subastragaloid arthrodesis.

The immediate results of treatment by rest in bed with massage and movements from the start are very much better than those of reduction and plaster. In many cases fairly good subastragaloid movements are preserved and the patient is able to walk with comparatively little discomfort. But sooner or later traumatic arthritis follows and the foot becomes stiff and painful.

The results of subastragaloid arthrodesis for fractures of the os calcis are often unsatisfactory, because (1) the operation is incomplete and the mediotarsal joints remain stiff and painful; (2) the foot is flat and ill-adapted for heel and toe walking; (3) after many months the patient has become accustomed to a stiff and painful foot.

It would seem that the best result that can be obtained from a fracture of the os calcis involving the subastragaloid joint is a completely stiff, but painless, foot of a good shape and with free movements at the ankle-joint, and I suggest that a complete triple arthrodesis should be done at once as a primary measure in such cases. This operation gives good functional results in paralytic, congenital and other deformities of the foot, and there is no obvious reason why it should not give equally good results in fractures of the os calcis.

In performing triple arthrodesis for recent fracture of the os calcis a slight modification of the usual procedure will be found useful. In these cases it is difficult to dislocate the foot inwards at the subastragaloid joint, because the bone is apt to come to pieces during the manipulation. A short longitudinal incision is therefore made first on the inner side of the foot over the scaphoid. Through this incision the scaphoid is excised and the cartilage is removed from the head of the astragalus and the bases of the cuneiform bones. This incision is then closed. The usual incision is then made on the outer side of the foot, and the calcaneocuboid joint is at once excised. The subastragaloid joint is now opened and dislocation of the os calcis is easy, because the bone is free from its anterior connexions.

The articular surfaces are removed piecemeal and the fragments of the os calcis are manipulated so as to restore the normal prominence of the heel. Finally the foot is displaced backwards and the operation is completed in the usual way. The foot is kept in plaster for four months, during which time the patient may get about on crutches but is not allowed to put weight on the limb.

As yet only two of our cases have completed the treatment and are walking without plaster, but both of these have active painless feet and they compare most favourably with any cases that I have seen treated by other methods.

INCIDENCE OF NEUROSIS IN ENGLAND UNDER WAR CONDITIONS*

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IT is not easy to decide whether a mental disturbance—neurotic or otherwise—is directly attributable to war conditions, and particularly to air-raids. It is therefore more informative to find out whether there is more, or less, neurosis altogether since the war, or since the intensive air-raids, than to count up the cases that seem to have been caused by the war. The latter criterion, however, is sometimes used. If the number of civilian patients admitted to special EMS neurosis units all over the country be taken as the measure, then there were not more than 300 such cases in the nine months, October, 1940, to June, 1941. The total number admitted in England and Wales during that period was 291, of whom 42 were admitted in May, 1941, and 94 in June, 1941. The apparent increase in the summer of 1941 was due to an influx of persons referred to the neurosis centres not necessarily because they needed inpatient treatment but in accordance with a newly instituted policy whereby all persons receiving an injury allowance for "shock" or similar neurotic reactions were required to enter hospital for an expert opinion on the cause of their illness, and for treatment; many of the latest admissions represented cases of unnecessarily long-continued payments.

The Ministry of Pensions has to deal with "shock originating from direct exposure to bomb explosion or blast"—a loose term covering neurotic reactions, as well as suspected but not verified physical injury from blast, and states of fatigue and exhaustion. In the first few months of the intensive raids from September, 1940, about 100 people a night were admitted to first-aid posts (a third men, two-thirds women), and roughly 18–20% of these were classified as "shock without physical injury": only about 10% of these people were admitted to hospital, and then perhaps only until the following morning. During the same period the Ministry were giving injury allowances for the effects of "shock originating from direct exposure to bomb explosion or blast" to about 100 persons a week; and roughly about 5% of those receiving injury allowances were cases purely of "shock" as thus defined. These figures, however, are approximate and have, of course, changed from time to time. The average period of incapacity for those on allowances for "shock" was about five weeks. This would not necessarily cover the period during which symptoms were incapacitating, nor imply that the disability was directly attributable to the bombing; the fallacies are much the same as those familiar in industrial compensation for injury.

It can be urged that those who claim benefit for "shock" may not be as numerous as those who might but do not; and that only those who have been in the near vicinity of a bomb explosion are likely to come under the notice of the Ministry of Pensions, yet neurosis attributable to war conditions might occur in others less dramatically exposed to stress. Because of this, and because it is difficult to determine whether a patient's neurotic illness is due to the war or not, the following data have been obtained from a doctor in general practice in London whose qualifications and careful records make his information peculiarly trustworthy. They show the variations that have occurred in the incidence of neurotic illness since the war.

A LONDON GENERAL PRACTICE

The doctor had about 3000 private patients on his books; they were of the (chiefly lower) middle class, and can be taken as a fair sample of the people of the district, except that the proportion of women to men was unduly high (2 : 1) owing to the inclusion of the wives of panel patients (i.e., of men earning and living on a weekly wage of not more than £5, and who were therefore entitled to National Health Insurance benefit though their wives were not). The number of patients of all kinds seen by this doctor between September, 1940, and May, 1941, was 740; the comparable figure for 1937 (January to May, September to December) was 970; 1937 was selected as the last year free from threats and rumours of war. This falling off would correspond to the fact that many women and children had been evacuated, and men had joined the Services. Thus 115 children were seen in 1940–41, as against 174 for the corresponding period of 1937.

* Report prepared at the request of the Medical Research Council.

TABLE I—DATA FROM A LONDON GENERAL PRACTICE IN NINE MONTHS OF WAR

—	—	1940				1941					Total
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
Patients attended who had no neurotic illness	Attendances	229	204	136	207	321	294	253	184	169	1994
	No. of patients	104	79	65	89	125	113	106	80	79	496
(A) Patients with no previous neurotic illness who developed it	Attendances	33	22	21	10	26	16	17	17	27	189
	No. of patients	17	11	10	6	10	8	10	9	11	49
(B) Patients previously seen for neurotic illness or anxious personality whose illness was aggravated (excluding attendances for non-neurotic illness)	Attendances	100	86	48	54	78	56	56	61	42	581
	No. of patients	49	41	28	25	33	26	23	27	22	102
Chronic neurotics improved or stationary	Attendances	18	20	18	18	30	20	22	19	15	180
	No. of patients	12	11	10	11	10	9	11	9	7	78*
Patients seen for neurotic illness not previously known	Attendances	11	7	7	3	7	1	0	6	2	45
	No. of patients	5	3	3	4	3	1	0	2	1	15
Total number of patients	Non-neurotic	104	79	65	89	125	113	106	80	79	496 | 740
	Neurotic	83	66	51	46	57	44	44	47	41	244 |
—	% Neurotic	44	46	44	34	31	28	29	37	34	33

* Including a number not treated for neurosis but seen for other reasons.

Average number of attendances for patients during Sept. 1940 to May 1941: non-neurotic 4·02; neurotic illness 4·08 (+ other attendances for non-neurotic illness).

Patients seen Jan. 1940 to Aug. 1940 and not seen since (both neurotic and non-neurotic)	556
Patients seen Sept. 1940 to May 1941	740
	1296
Patients seen 1937–39 and not seen since	1620
Estimated total number of patients (not on panel list)	2916

The number of patients seen for neurotic disturbance, from September, 1940, to May, 1941, was 244—that is, a third of all patients seen had a neurotic illness during the period covered (tables I and II). The average number of attendances was the same for those with neurotic illness as for those physically ill, unless the physical illnesses of neurotics are also reckoned, in which case they have a higher average number of attendances. During 1937 the proportion of those neurotically ill had been lower (27% of all patients seen, table III); but a third of all female patients seen were complaining of neurotic disorder, whereas only a fifth of the men did so. An increase in the proportion of women seen in 1940–41 would therefore be likely to lead to a higher proportion of neurotic patients. The proportion of men to women, however, among all patients seen between September, 1940, and May, 1941, was the same as it had been in 1937, and the proportion of men to women among those with nervous illness was also the same during the two periods in question. The rise, therefore, in the proportion of neurotic illness did not depend on a change in the sex ratio.

The absolute number of neurotic persons seen in 9 war months (September, 1940, to May, 1941) was the same (between 240 and 250) as it had been for the corresponding period two years before the war, but as the total number of all patients seen had fallen off (from 970 to 740), it appears that there had been a slight rise since the blitz in the amount of neurosis in the available population. Of these neurotic patients rather more than half (now, just as in 1937) have a straightforward neurosis, and the remainder have prominent neurotic symptoms masquerading as physical disease or due to physical disease. Of the 1940–41 neurotics, 20% had not previously had a neurotic illness; 74% of them were known to have had previous neurotic disturbance, which had been made worse by the war in most cases; in the remaining 6% reliable previous data were not available. In two-thirds of the neurotics the conditions had developed, or been aggravated, since the war. The prognosis was good in those 49 patients who had hitherto been free from neurotic trouble: 34 of them recovered or improved greatly, whereas only 24 recovered or improved greatly out of the 102 who had a previous history of neurosis.

As to the part played by actual war stress, including air-raids, there was evidence that this was one of the causes of the illness in three-quarters of the patients who were now having their first neurotic attack; and that it was partly responsible in four-fifths of the patients who had a history of previous neurotic trouble (table II) Air-raids alone had played a causal part in an eighth of the previously neurosis-free: and in a sixth of those with previous neurotic history. The severity of the neurotic illness was much greater in the "aggravated" group who had a history of previous neurosis than in the others; only 4% of the previously neurosis-free had now got a severe neurosis as contrasted with 20% of the "aggravated" group.

From all this it follows that a severe neurosis hardly occurs as a war phenomenon except in people who had been neurotic before the war; and that when neurosis

TABLE II—RESULTS AND EFFECTS OF WAR AND RAIDS IN PATIENTS A AND B OF TABLE I

Previous personality good

Severity	No.	Result	No.	Factors include			
				War	Raids	Both	Neither
Mild	37	Recovered	10	2	3	..	5
		Much improved	17	6	2	5	4
		Improved	3	1	..	..	2
		I.s.q.	2	2	..	..	..
		Unknown	5	..	2	3	..
Moderate	10	Recovered	0	..	..	..	..
		Much improved	6	3	1	1	1
		Improved	1	1	..	..	..
		I.s.q.	1	1	..	..	..
		Unknown	2	1	..	1	..
Severe	2	Recovered	0	..	..	..	..
		Much improved	1	..	..	..	..
		Improved	0	..	..	..	..
		I.s.q.	1	1	..	..	..
		Unknown	0	..	..	..	..
Total	49	..	..	18	8	11	12

Raids a factor in 39%; improvement in at least 78%.

Previous neurotic history

Severity	No.	Result	No.	Factors include			
				War	Raids	Both	Neither
Mild	50	Recovered	1	..	..	..	1
		Much improved	17	10	3	2	2
		Improved	11	4	3	3	1
		I.s.q.	16	4	3	9	..
		Unknown	5	..	2	1	2
Moderate	32	Recovered	0	..	..	..	..
		Much improved	6	1	..	2	3
		Improved	10	1	..	8	1
		I.s.q.	16	4	1	6	5
		Unknown	0	..	..	..	..
Severe	20	Recovered	0	..	..	..	..
		Much improved	0	..	..	..	..
		Improved	3	..	1	2	..
		I.s.q.	16	3	4	5	4
		Unknown	1	1	..	..	..
Total	102	..	..	28	17	38	19

Raids a factor in 54%; improvement in at least 47%.

develops or is aggravated during the war, war stress had not been responsible for this in a quarter of the previously healthy, and in a fifth of those with previous neurotic history. Moreover, recovery or great improvement is the rule in those who were not already neurotic before the war.

It is interesting to see whether the months during which London was heavily bombed showed a heavier incidence of neurosis. Fig. 1 (based on financial returns which have been found to correspond closely to attendances) shows that between September, 1939, and September, 1940, the number of patients who attended showed much the same rise and fall as in previous years, except for slight deviations attributable to the first evacuation from London in the early months of the war, and a smaller exodus at the time France capitulated. From September, 1940, however, the curve is quite different, and shows that there was either very much less illness than might be normally expected, in the autumn and early winter of 1940, or—obviously the more appropriate explanation—that the population of the district was declining. It follows that a comparison of the absolute figures of neurosis for the months between September, 1940, and May, 1941, with each other, or with those of the corresponding months of previous years, would be misleading, and that any month by month fluctuations in the amount of neurosis could best be recognised by a monthly fluctuation in the proportion of neurotic to physical illnesses seen. On such a basis it would seem that the percentage of neurosis was higher. in the months September, October, November, 1940 (figs. 2 and 3).

MERSEYSIDE

Data have been obtained, particularly about Liverpool, from the professor of medicine (who is physician at the Royal Infirmary), three psychiatrists in charge of out-patient clinics in Liverpool, and six general practitioners (three in Liverpool, Birkenhead and Wallasey—bombed areas—and three in reception areas to which Merseyside people betook themselves after the raids). Their evidence is not discrepant. The Liverpool doctors—psychiatrists and others—state that they have not observed any increase in the incidence of psychoneuroses as a result of war, and the doctors in reception areas say they have seen: "very few who show nervous disturbances, or more than the usual anxiety which we all feel these days"; "no evidence of any numerical increase—a few who were abnormally nervous people before were somewhat worse."

However, one practitioner (in Llandudno) reported having seen many cases of "mental fatigue and nervousness which soon improved in our more fortunate surroundings. The patients in particular with a high blood-pressure and the associated nervous make-up suffered badly but again responded well to rest and treatment. . . . My partner bears out what I have said, and we might add that we not only have to deal here with evacuees from Liverpool but are also in charge of two large working-class convalescent homes for the Birmingham districts, which would be expected to bring to our notice a disproportionately higher number of cases of psychoneurosis, if they existed. Among these patients also, one does not seem to find a higher proportion of such psychoneurotic patients than prior to the war." And another in Rhyl says: "except for the initial shock and a purely temporary phase for a short time afterwards I have not seen neurotic reactions in the large number of people who have come from the large towns where they have been bombed very severely. I have seen a number of anxiety states but they have all been in people who have not been bombed at all (anticipation neurosis)."

The demeanour of injured persons was described as "patient and stoical. . . . I had less trouble here than in an ordinary hospital ward. No complaints: smiles occasionally mixed with tears, if one inquired about relatives, were usual. . . . These patients, having tasted the bitterness of homes gone and injuries sustained, were grateful for any attention and had a serenity and calm which might be due to the fact that, having experienced their worst fears and come through, they were content to await the future and not rush to meet it—no evidence here of neurosis, either hysterical or depressive."

One of the psychiatrists (who has an outpatient clinic at the Royal Southern Hospital) mentions that "some of one's old chronic cases seem to be improved in present circumstances." And, while pointing out that the falling off in attendances is partly accounted for by the unwillingness of patients from outlying districts to come into Liverpool, he discredits the view that there are large numbers of war-stress patients who do not get to the psychiatrists; he adds that discussion with his

TABLE III—DATA FROM THE SAME GENERAL PRACTICE FOR 1937

Patients seen in 1937	No.	Av. age (yrs.)	Children 14 or under	Av. age excluding children	Per cent. of same sex	Per cent. of total illness
Female—						
For physical illness only	575	37	125	45	69	46
For nervous symptoms	146	47	4	48	17 } 31	12 } 21
For neurosis	115	41	4	43	14 }	9 }
	836	..	133	..	..	67
Male—						
For physical illness only	332	32	107	45	83	27
For nervous symptoms	34	40	2	43	8 } 17	3 } 6
For neurosis	35	35	0	35	9 }	3 }
	401	..	109	..	..	33
Total ..	1237	..	240	..	..	..

Of total number .. 67% female, 33% male.
Of the females .. 69% physical illness, 17% nervous symptoms, 14% neurosis (31% nervous illness).
Of the males .. 83% physical illness, 8% nervous symptoms, 9% neurosis (17% nervous illness).
Of the total .. 73% physical illness, 15% nervous symptoms, 12% neurosis (27% nervous illness).
Of physical illness 63% female, 37% male.
Of nervous illness.. 40% nervous symptoms in female, 35% neurosis in female (75% female); 12% nervous symptoms in male, 13% neurosis in male (25% male); i.e., 52% nervous symptoms, 48% neurosis.

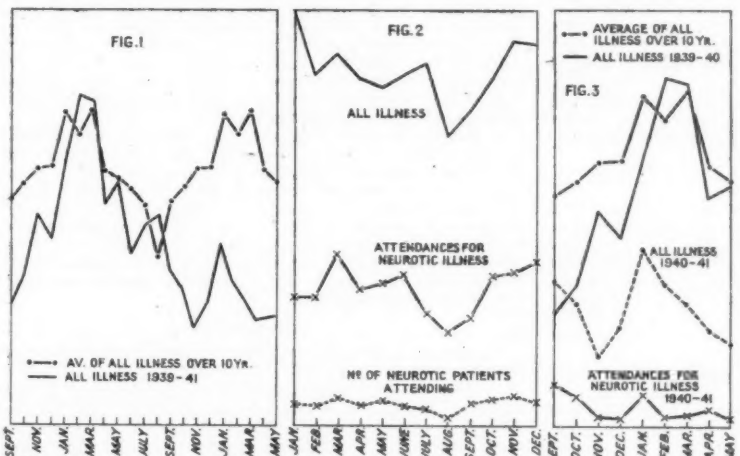
FIG.1
AV. OF ALL ILLNESS OVER 10 YR.
ALL ILLNESS 1939-41
SEPT. NOV. JAN. MAR. MAY JULY SEPT. NOV. JAN. MAR. MAY
1939 1940 1941
FIG.2
ALL ILLNESS
ATTENDANCES FOR NEUROTIC ILLNESS
Nº OF NEUROTIC PATIENTS ATTENDING
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
1937
AVERAGE OF ALL ILLNESS OVER 10 YR.
ALL ILLNESS 1939-40
FIG.3
ALL ILLNESS 1940-41
ATTENDANCES FOR NEUROTIC ILLNESS 1940-41
SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY

Figs. 1-3—Experience in a London general practice. Fig. 1 shows the incidence of all illness from September, 1939, to May, 1941, compared with the previous ten-year averages. In fig. 2 the numbers of attendances and of patients attending for neurotic illness in 1937 are compared with the attendances for all illness in the same year. Fig. 3 shows the attendance for neurotic illness and all illness in 1940–41, compared with attendances for all illness in 1939–40 and in the previous ten years.
These curves have been computed in part from financial returns, and though their vertical scales are comparable it is not possible to express them in figures.

hospital colleagues in all departments and with general practitioners confirms his opinion, but "of course I am excluding the emotional distress and mental fatigue of short duration, following on severe or prolonged bombing—such states are obviously widespread but do not constitute neuroses." This tallies with the Llandudno doctor's comment above.

The two other psychiatrists report that in two first-line hospitals, which received respectively 578 and 743 air-raid casualties, there were only two instances of "acute mental or nervous distress," and they remark that inquiries about first-aid posts elicited little difference of experience from the above: there were instances of "very minor and transient alarm" such as could be dealt with by ARP personnel. They too report that continuous and intensive air bombardment has not been followed by any immediate rise in the number of cases referred to psychiatric outpatient clinics. As to later effects, they have found that persons known to have been unstable before the air-raids "remain relatively unaffected by blitz conditions, their activities and even their responses to treatment pursuing a normal course." These psychiatrists, however, say in general terms: anxiety states, mildly depressed conditions, and states of transient confusion and mental exhaustion have been found to follow enemy action; these have been of varying duration; a notable feature has been their incidence among elderly persons, and adolescents. Among the cases in civil defence workers the elements of fatigue, extreme mental and physical exhaustion and previous unfamiliarity with gruesome circumstances, as experienced by regular and auxiliary firemen, rescue parties and first-aid workers, have naturally been of marked contributory significance. Another Liverpool psychiatrist says that he has noticed that half of his patients are worse since the war, a quarter are better, and a quarter unaffected: most of those who did not improve were unmarried men of military age.

From Liverpool and Birkenhead come such reports as: "the commonest neurotic reaction in this area has been one of flight to the safety areas: . . . of those that remained the majority are fairly cheerful, and the commonest reactions of which the minority complain are sinking feelings in the epigastrium, insomnia (lying awake listening for sirens), a few cases of diarrhœa at night during the raid and for the following day"; "I run a private practice ranging from the better class industrial workers upwards: all my patients and friends have stood up to the raids much better than I expected. A few, mostly women of middle age, have been upset and found themselves weeping for no reason at all: the exhibition of a little bromide has been all that was necessary to cause disappearance of their symptoms. I have seen very few people seriously affected but in each case there has been a definite history of mental instability . . . many who have had very unpleasant experiences—loss of home, narrow escapes, loss of relatives, &c.—continue to live in the danger zone, and whilst admitting, as do we all, that they do not like the raids, nevertheless face them. Many patients of over 70 have stayed put and do not appear to be seriously affected either by fear or loss of sleep."

It is of interest that the doctors in Liverpool trained 18 volunteers as auxiliary mental-health workers for service in and after raids, but none of the 18 has been required: there was no such work for them to do.

BRISTOL

The staff of the Bristol Child Guidance Clinic made a survey during January, 1941, of people sleeping in a tunnel, housing 2200–3000 persons. Fifty families were investigated totalling 172 persons. These people were spending twelve or more hours every night in the tunnel, they had only what meals they could bring with them or prepare on the spot, and many, in the unscheduled part of the shelter, were dossing on bedding on the earthen floor.

"The striking result of this survey was the very high proportion of individuals suffering from well-marked nervous symptoms; generalised fear of air-raids was universal and was discounted for the purposes of the investigation. The subjects considered nervous were either diagnosed as such by their own doctors or showed well-marked symptoms of psychological illness. Of all the (family) units investigated 82% included one or more members suffering from psychological illness, 50% of these units included members receiving treatment from doctors, hospitals or clinics for 'nervous' disorders. Those persons who stated that they 'had no faith in Anderson shelters' nearly always had psychological signs, and this could almost be taken as a psychological symptom. Damage to the home (58%) or absence of domestic shelter (74%) were aggravating factors. . . . In spite of considerable hardships involved in travelling long distances to the tunnel, difficulties in preparing food, and unsatisfactory sleeping accommodation, the great majority of these nervous subjects have improved in health since they have spent their nights in the tunnel." The psychiatrist points out that "the determining causes of this troglodyte life act on the family as a whole, whether they be absence of shelter, damage to the home, or the presence of a neurotic member of the family; only in very rare instances does the neurotic come alone. Usually, he or she is accompanied by one or more members of the family, though the more stable members of the family may elect to stay at home and assist in fire watching and other ARP duties." Consequently, the shelter population would contain an unusually high proportion of neurotic and otherwise unstable subjects. This would apply less to London, where the available shelter accommodation was much greater.

The appendix to the Bristol report, containing brief case-histories of the 50 families, bears out the statements about the high incidence of neurosis.

In the middle of February, 1941, the same investigators visited 25 families who had first been seen in the rest centre after being bombed out, and were now installed in a house of their own again; 8 of the families had been evacuated because of delayed-action bombs; the other 17 families (73 persons) had had their houses demolished, 3 of the families (19 persons) having been buried for a time in the ruins or in their Anderson shelters and then dug out; yet only 1 of these 19 persons showed even slight psychological symptoms.

"Many of these homeless people who had lost most or all of their possessions appeared dazed or stupid in the rest centres, but all of them improved remarkably once they had been installed in a house of their own, and appeared quite different. Naturally, the elderly proved less adaptable and more uprooted. But on the whole adaptation was good. As was to be expected, there was a relatively high incidence of psychological symptoms in these victims of enemy action; 19 persons out of 73 (26%), but only 3 men, had stopped work on account of these symptoms, and 2 of these were over sixty."

It is mentioned that in quite a number of these families, as it happened, the mother was of low intelligence, and even in some cases actually feeble-minded.

BIRMINGHAM

From other big cities comes less detailed information. A psychiatrist in Birmingham writes (June, 1941) of the rather extraordinary absence of mental ill health.

"I have, however, been getting more cases of neurosis precipitated by or increased by air-raids than I had some months back, and I believe there will be a fairly big time-lag before the effects can be assessed. Also my people are ashamed to complain of their symptoms, and thus are put on the panel and tend either to recover or become chronic before they are passed on for psychiatric treatment, while others again evacuate themselves."

A group of 50 unselected cases, 25 male, 25 female, treated at the Midland Nerve Hospital, Birmingham, between November, 1940, and May, 1941, was analysed: 21 of them came from the "target" area, 16 from the periphery of the city, and 13 from the suburbs or country. In 4 cases—all diagnosed "hysteria"—this condition had been precipitated by raids; in 13 cases (8 of anxiety, 3 of depression, 2 of schizophrenia) raids had aggravated a pre-existing condition; in 6 patients the illness was only slightly affected, and in 27 it was not affected, by raids.

COVENTRY

In Coventry the medical officer of health reported after the November, 1940, raid:

"Many cases of mental distress found their way to the first-aid posts for rest and sympathy. They can best be described as having been stunned by events. In the main their condition soon became normal. On the whole the reaction of the population was one of calm defiance. Doubtless there was a proportion of neurotic subjects, notably amongst the hasty evacuees. Actually there has been a decrease in the number of patients attending the psychological outpatient clinics held twice weekly in the city. This is probably due to (*a*) the decrease in the civic population due to evacuation, and (*b*) the likelihood that the clinic patients—

actual or potential—were among the first to evacuate. Nevertheless it cannot be said that there is evidence of any notable increase in the incidence of neurosis. Coventry has suffered many previous raids, and it may be that these served to eliminate the more nervous people by evacuation prior to the big raid."

A psychiatrist confirms the foregoing, in the main (May, 1941):

"The numbers of new cases at the psychiatric outpatient department at the Coventry and Warwickshire Hospital have hardly altered since the air-raids began. On the average 5 new cases are seen each week. Hardly any hyperacute neuroses have been referred either to the department, to the County Mental Hospital or to the Regional Neuro-Psychiatric Emergency Hospital. During the past few months there has been a trickle of anxiety states and hysterics that could be attributed more or less directly to the air-raids. These, however, hardly ever appear for a few weeks after the raid in question. In the general emergency hospitals to which I am attached as consultant, one sees a few more acute psycho-neurotic conditions, often associated with physical injuries. The chief psychiatric problem after a big raid is in coping with early senile cases who become maladjusted, and mental defectives who should years ago have been institutionalised. Both these types seem easily to become unstuck when having to live in a shelter. My general impression is that the number of neurotic disturbances is considerably higher than we realise, but that the cases just do not get treatment; that is not to say, however, that the majority of them do not make a spontaneous recovery."

MANCHESTER

In Manchester which has had severe, but relatively few, raids there has not been any increase in the number of patients attending psychiatric outpatient clinics, nor according to social workers has there been any demand for psychiatric help among the adult evacuees in the quieter regions around Manchester. A previous history of neurosis, or of high-grade mental defect has been found in the patients with neurotic reactions to raids.

LONDON

The number of new patients seen at various psychiatric outpatient departments in London was 4330 in 1940, as against 5945 for the same clinics in 1939. These figures cannot be taken at face value since there were many other factors influencing them besides the actual amount of neurotic illness: for instance, many of the clinics were working with reduced staff and much reduced hours of attendance. They suggest, however, that there was no increase in neurotic illness.

Further loose data about the London population indicate that, as was reported from some provincial regions, the reactions to bombing may be delayed. Thus in the middle of September hundreds of homeless people from East and West Ham had been moved to rest centres in Essex. They were depressed, as a group, and thus contrasted strongly with the cheerful demeanour of those seen in similar rest centres in London itself, to which the people had come immediately after the raid. However, these people did not need a doctor's attention. Similarly among a large number of London evacuees seen in a Yorkshire reception area after having been bombed out, intolerance and irritability were noticed, in contrast to the usual Cockney good humour and endurance. Among 1600 homeless people moved to another area (which was itself in the gun barrage, and where many bombs were dropped) and billeted there, there were 130 who during October, November and December, 1940, came under the notice of a psychiatric social worker as being "nervous"; 45 of these 130, however, were under the age of 16, and only one of the 85 adults became a hospital inpatient; 12 attended a psychiatric outpatient clinic (usually only for one interview with the psychiatrist): "In many cases the difficulties of a new environment, separation from other members of the family, and loneliness seemed as important factors as the bombing experiences they had had—minor environmental adaptations and friendly visiting were sufficient to put them right." Most of the cases cleared up well.

A special problem in the civilian population is presented by those in the ARP services, and especially in the fire-fighting service (AFS). These men are employed by the local authority, and any with incapacitating nervous symptoms are, in the London area, officially referred to a Maudsley psychiatric clinic for advice. The total number of men, among the thousands of London's AFS, who have been referred to various Maudsley outpatient clinics for advice either officially or by their own doctor, was 72 between September, 1940, and May 30, 1941. There are, of course, some among the men who are being treated by their private doctors for neurotic symptoms, but any who have had to stop work on account of their symptoms would be referred to the clinics mentioned. A few of the AFS men have been seen, after heavy exposure, suffering from exhaustion comparable to that seen in the soldiers evacuated through Dunkirk; and they show similar rapid recovery after rest, though they may turn out to have had a predisposition to neurosis, and to be henceforward less able to bear the stress of their ARP work.

Among those doing the less strenuous and dangerous forms of ARP work (e.g., telephonist at a post) instances of improvement on their previous mental health are reported; they have a definite and satisfying job. Similarly an investigation made in the spring of 1940 on chronic neurotics attending outpatient clinics showed that a proportion had improved since the war gave them interests previously lacking. On the other hand, many persons who had been uneasy and anxious during the first year of the war (when there was no tangible danger but much room for morbid and exaggerated fears) were able to settle when they had experienced the real thing and knew the worst. There are no reliable figures showing the extent to which this observation, made by observers in different parts of the country, held good for the neurotic population as a whole.

It would be wrong to assume, as some have, that socially undesirable behaviour, especially evasion or timidity in the face of danger and privation, are the only forms of neurotic reaction evident; obsessional neurosis, for example, is seen which does not conflict with social duty and capacity to perform it; many patients with anxiety neurosis are courageous and enduring, and some of those who eventually become incapable of carrying on with their work because of neurosis have long done good service in spite of their symptoms. Their illness is incapacitating, like physical disability; if criteria of moral and social responsibility are introduced, they lead to the conclusion that undesirable or blameworthy manifestations of neurosis and psychopathic personality are far less often seen in neurotic civilians than in neurotic soldiers. This does not imply a reflection upon the soldiers (who are mostly yesterday's civilians) but is an outcome of the different environmental and emotional causes at work in the two groups. Discussion of the causes of neurotic symptoms would be irrelevant here: as is also discussion of the forms neurotic illness takes when these war-time causes are operative. An account of the types of unhealthy mental reaction seen among the civilian population may be found in various articles (Felix Brown 1941, Harris 1941, Pegge 1940). There is nothing new in these types of reaction, nor in the semistupor described in a few cases as an immediate reaction to bombing.

PSYCHOTIC REACTIONS

So far neurotic reactions have been considered. The common distinction between neurosis and insanity is, however, at bottom so arbitrary and vague, except for legal and administrative purposes, that many cases fall equally well into either category. Thus among those committed to observation wards on a relieving officer's order since the war, there have been some who would in ordinary times be treated as neurotics in an outpatient department or an ordinary hospital ward.

Admissions to observation wards in London, the best provided and organised city in this regard, have varied not only according to the number needing admission but also according to the available accommodation, several large observation wards having been blasted or set on fire. The Dulwich observation ward serves a population of approximately 700,000, in a district which has been severely and repeatedly attacked from the air. Between September, 1940, and February, 1941, 435 patients were admitted—an increase of 25% on previous figures. But probably this does not

indicate an actual rise in the incidence of patients needing admission, for the 250 beds of the Maudsley Hospital, barely a mile away, were no longer available, and its outpatient department was temporarily closed; moreover, an observation ward in Fulham had been bombed and its clientele was for a while transferred to Dulwich. There was, however, a relative increase in senile cases, as has been reported from many other bombed towns. Elderly people are reluctant to leave their homes, no matter what the danger, and while some bear bombardment with remarkable indifference, others find the dislocation of their lives too much for them; their accustomed rut is not there for them to run in, their relatives who looked after them are dispersed, and in the confusion they become helplessly confused. Of the 435 patients admitted, 32% were diagnosed senile dementia, 20% other organic disorders, 2%

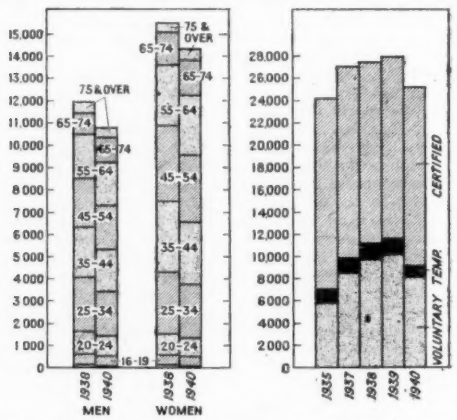

Fig. 4—Analysis of admissions to all county and borough mental hospitals in England and Wales during the years indicated.

psychopathic personality, and 1% anxiety neurosis or hysteria: 20% had a depressive syndrome, 5% mania, and 20% schizophrenia. There were in all 13 cases that seemed directly attributable to air-raids; and 9 other cases in which the raids had played a minor part in causation. The case-histories in Harris's (1941) paper indicate the type of case, and indicate also how a condition apparently attributable to air-raid stress can be at bottom one of general paralysis of the insane or paralysis agitans; the problem (apparent aggravation of physical disease by psychological factors) is one that became familiar to pensions boards in and after the last war.

An observation ward in the badly attacked East End of London (Bow) admitted during the four weeks Aug. 28 to Sept. 24, 1940, 95 patients, whereas during the corresponding period of 1939 the number of admissions had been 120; the decline was chiefly in male cases (39, as against 62 in 1939).

Fluctuations in the population do not make the figures for admissions to all county and borough mental hospitals in England and Wales so difficult to interpret as those of London. Total admissions in such hospitals were 8% less in 1940 than in 1938; the falling off was greater among men (9%) than among women (7%). The fall in number of admissions (fig. 4) may or may not reflect the changing incidence of mental illness in the population at large. Probably it does not. Factors of an extraneous nature have operated to keep the number of admissions low, the chief of these being the demands made upon available accommodation in the hospitals by the conversion of many of them either wholly or partly into emergency hospitals for physical illness. This may be seen in the changing numbers of voluntary patients admitted. The voluntary admissions had until the war been increasing both absolutely and relatively to the certified admissions. In 1937 voluntary patients were 31% of all admissions, in 1938 35%, in 1939 36%; but in 1940 they fell to 32%. Whereas in 1940 the certified admissions had only diminished by a fiftieth from the 1939 level, the voluntary admissions in 1940 were a fifth less than their 1939 number. This falling off was due to administrative action and to the fact that voluntary patients include those in whom admission to the mental hospital may not be imperative. The actual numbers of voluntary patients admitted in 1940 had fallen below the 1937 level (fig. 4).

The general age-distribution of all mental hospital admissions in England and Wales remains about the same—most of the cases come from the age-groups 25–65, the decade 45–54 supplying the largest quota of women, and the decade 25–34 the largest quota of men. The maximum variations between 1938 and 1940 are seen in the age-groups 20–24, 25–34, 35–44, 45–54, where the number of men admitted diminished by 20%, 16%, 15%, 13% respectively, and the number of women by 11%, 13%, 14%, 11% respectively; and in the age-groups over 75 where the male admissions increased by 41% and the female by 34%, though the actual numbers are not large and the absolute increase considerably less than the absolute fall in other age-groups. If 1939 be compared with 1938 and with 1940, variations are observed especially in the 16–19 age-group. The explanation is not clear; 1939 was, of course, a mixed year partly of peace and partly of war, and male adolescents may have been influenced by the introduction of the Militia Training Bill.

There are some indications of mental ill health which do not come under the notice of doctors and hospitals so much as of legal authorities. Suicide is the most prominent of these. Recent and reliable data about suicide are not available for England and Wales. For Scotland the figures have been published on a quarterly basis:

	MALE					FEMALE					
Quarter	*1*	*2*	*3*	*4*	*Total*	*1*	*2*	*3*	*4*	*Total*	
1938	..	..	..	..	297	..	..	..	..	163	(460)
1939	78	91	82	61	312	40	34	43	29	146	(458)
1940	66	68	65	59	258	38	38	38	28	142	(400)

The annual report for 1938 does not provide the data on a quarterly basis. The quarterly returns for 1939 and 1940 provide age-groupings, but do not subdivide these according to sex. The figures indicate a significant fall in the total suicides for 1940—the total of 400 compares with 458 for 1939 and 460 for 1938 and is the lowest since 1925. If the returns are subdivided into two age-groups, the figures are:

	OVER 45 (M. AND F.)					UNDER 45 (M. AND F.)					
1938	..	..	..	..	292	..	..	..	..	168	(460)
1939	73	85	74	58	290	45	40	51	32	168	(458)
1940	71	61	64	38	244	33	45	39	39	156	(400)

This suggests that among those under 45 there has not been a fall in the frequency of suicide; there may have been a rise. The small reduction, from 168 to 156, would be within the normal range of chance fluctuation. The under 45's have lost a considerable proportion of their male population to the Army (Army deaths, from whatever cause, are not included in the civilian returns during war-time), and young males normally contribute a heavy percentage of the total suicides under 45.

Among the "over 45's" the reduction in 1940 of 16% is significant. The size of the population concerned has not changed materially. I would not speculate about the reason for this fall in Scotland. Suicide-rates usually fall during war. The rate became appreciably lower between 1915 and 1918 in belligerent nations (Great Britain, Australia, New Zealand, South Africa, Germany, Italy, U.S.A., Japan) and in non-belligerents too (Sweden and Switzerland). Nor is this wholly accounted for by the high number of men within the suicide-age who are withdrawn into fighting services: in England and Wales there was a fall of 10% in the suicide-rate for women during the last war.

ALCOHOL

If the consumption of alcohol had risen greatly since the war it might suggest an increased amount of mental instability in the population—as the cause of the drunkenness, and perhaps also as an effect of it. Figures, however, can easily be misleading here.

By agreement with the Government no more beer (measured in standard barrels, 36 gall. of specific gravity 1055) is produced each year than in the year ended Sept. 30, 1939. The total bulk of beer produced ("bulk barrels") may be greater, but the amount of alcohol cannot rise above the 1939 figure. Shortage of labour and of materials (especially malt and sugar), damage to plant by bombing, and problems of transport have made it difficult for even this output to be attained. In some areas there has been an increased demand; on the other hand there are grounds for believing that the consumption of beer

fell off notably in blitzed areas such as London. Where there has been a local increase in demand it is attributable to the shift of population, longer hours of daylight (double summer time), more money in wages, and fewer means of spending it on food and clothing.

Other alcoholic drinks have become notoriously hard to get. The output of whisky and gin for the home trade has been limited to half, and these drinks have become inordinately expensive; brandy and wines are becoming unobtainable. Until the war the consumption of British manufactured wines made from imported grape-juice had risen steadily from 2,841,977 gall. in 1929–30 to 6,470,691 gall. in 1938–39, but the tax on them has been increased considerably, and the source is no doubt nearly exhausted.

Police-court statistics are informative about areas where drinking is excessive. Figures are available for 82 out of 85 English and Welsh county boroughs, and for 22 out of the 66 counties. There were 35,478 proceedings for drunkenness in the county boroughs in 1940; this meant a drop of 12% from the previous year. There were 29,129 convictions—a drop of 9% from 1939. In the 22 counties proceedings and convictions for drunkenness had similarly diminished by 12%. Part of the decrease in the county boroughs has been contributed to by London where the fall was notable.

	1940	*1939*	*Decrease*
Proceedings ..	14,145	18,062	3917
Convictions ..	11,980	15,252	3272
Charges proved ..	13,806	17,600	3794

It would be a mistake to read much into these figures: the police had more important things to do than arresting drunks, and the population had lessened.

The number of patients admitted to a London observation ward (Bow) for alcoholic psychosis in 1940–41 did not change appreciably from that of a normal peace year 1935–36. There is no evidence of increased drunkenness in the home counties, to which a part of the London population has moved. The areas in which there has been the most striking decrease or increase in proceedings and convictions for drunkenness are given in table IV.

TABLE IV—AREAS WITH LARGEST RISE OR FALL IN PROCEEDINGS AND CONVICTIONS FOR DRUNKENNESS

—	Proceedings		Rise or fall	Convictions		Rise or fall
	1940	1939		1940	1939	
DECREASE						
Brighton	136	270	134	110	235	125
Cardiff	277	377	100	171	231	60
Kingston-upon-Hull	440	547	107	412	511	99
Liverpool	2439	2772	333	1555	2023	468
Manchester	1769	2505	736	1229	1741	512
Newcastle-on-Tyne	804	926	122	717	816	99
Nottingham	209	276	69	164	189	25
Southampton ..	187	246	59	49	67	18
Salford	412	371	41	345	296	49
INCREASE						
Birkenhead	203	143	60	118	93	25
Birmingham ..	4219	4082	137	3772	3656	116
Bristol	334	288	46	189	136	53
Carlisle	124	84	40	118	75	43
Middlesbrough ..	425	368	57	403	343	60
Gateshead	271	227	44	254	206	48
Newport	573	327	246	442	261	181
Oldham	229	175	54	195	156	39
Portsmouth ..	317	275	42	290	229	61
Rochdale	93	43	50	78	41	37
South Shields ..	259	184	75	235	165	70
Swansea	429	273	156	304	159	145
Warrington	132	79	53	124	68	56

ACCIDENTS

Road accidents have increased alarmingly. The Royal Society for the Prevention of Accidents attributes this not only to material factors such as shortage of traffic police, abnormal special traffic, and lighting restrictions, but also to psychological changes: "mental preoccupation due to war strain; exasperation induced by transport difficulties and delays" and so forth. The Parliamentary White Paper of Nov. 21, 1941, says the same. Between September and December, 1940, 4380 people were killed on the roads—245 more than in the corresponding months of 1939, and 1884 more than in the corresponding months of 1938. In the first 12 months of the war 8358 persons were killed on the roads, an increase of 25% over each of the years 1935–38. In the second 12 months of the war the number of deaths rose by a further 20% to 10,073. During May, 1941, 701 people died of road accidents, against 449 in May, 1940; for June the corresponding figures were 618, against 479. It is not possible to say how far mental stress has contributed to this enormous rise in road accidents, most of which occurred during the hours of daylight.

It has been asserted that accidents in factories may be symptomatic of strain. This is, however, not the main explanation of the rise in industrial accidents which occurred immediately after war broke out and has continued; during 1939 fatal accidents in factories increased by 17%, and in 1940 they were 25% higher than in 1939. When so many untrained youthful workers are being hurriedly absorbed into industry, a high accident-rate is to be expected. Nevertheless, the possibility that the strain of war-time conditions with resultant fatigue and carelessness, acts as a contributory if minor cause of accidents cannot be eliminated. More plainly relevant are reports on the health of factory workers. In the Annual Report of the Chief Inspector of Factories for 1939 the senior medical inspector described conditions (possibly neurotic) of pallor, impaired digestion and lasssitude which it was thought might have been due to the black-out strain produced by expectation of air-raids, anxiety, overwork, &c. The Deputy Chief Inspector said in May, 1941, that a return from 5000 factories showed that nearly half of them were working over 56 but under 60 hours a week. This is risky in the long run from the standpoint of mental and possibly of physical health; the 1916 Committee on the Health of Munition Workers spoke of the "state of reduced efficiency and lowered health" due to insufficient daily and weekly rest. Adequate data are not available. Absenteeism may also be a symptom of mental, or of physical, ill health, though the causes indicated in the 17th report of the Select Committee on National Expenditure—especially transport difficulties and longer working hours—are more common and important. Some investigations have suggested, however, that the strain of poor sleep (through air-raids), anxiety, loss of home, and long hours of work followed by tiring travel play a large part in absenteeism in such badly blitzed towns as Plymouth or Bristol.

CHILDREN

Observations on children have been chiefly directed towards the ill effects of separation from home and parents through evacuation, and the effects of air-raids; juvenile delinquency has excited public and official attention.

In February, 1941, an investigation, of the questionnaire type, into 8000 Bristol school-children after severe air-raids, showed about 300 (4%) with symptoms of nervousness attributed to raids—anxiety, trembling, crying, enuresis, headache, sickness, dizziness. Half the affected children were between the ages of 5 and 7, a third between 8 and 10, a quarter between 11 and 14. Later a survey was made of some Bristol children who had had to be removed hurriedly from a hospital when it was hit by a high explosive bomb, at the height of a severe air-raid. Nearly two-thirds of the children showed signs of stress for a period between 3 weeks and 2 months afterwards and 11% of them still showed persistent symptoms 7 months afterwards, but these did not occur in children over 5½ years of age. Similar observations were made on other children in Bristol, and in Manchester, as well as on children evacuated to a Welsh seaside area after severe raids; in these children the amount of nervous disturbance was dependent, apparently, on the amount of fear experienced by the child during the raid; frightened mothers communicated their fears to the children. An investigation of children evacuated from London indicated that among 15,000 there were 420 cases of breakdown (2·8%): 249 were boys and 171 girls, most of them between 7 and 11, and their symptoms were enuresis, hysterical vomiting, sleep-walking, fits, tics, anxiety and depression. "Sometimes the symptoms, on arrival from a bombed area, were really acute for a few days. One child had presented the complete picture of an adult depressive psychosis for nearly seven weeks." (This report is by a non-medical observer.)

There is a consensus of opinion that children show great adaptability and recover well from air-raid effects, if simple, sensible measures are taken; likewise, that the

strain of evacuation is great or little according to the care and success with which the foster home or billet is selected. The carefully executed survey of London children evacuated to Cambridge demonstrates this, so far as the pre-blitz period is concerned. An incidental examination of 656 school-children, reported in this survey, showed that 87 (13%) needed treatment because of mental ill health—36 were excessively anxious or depressed, 5 were self-absorbed, 36 abnormally quarrelsome and jealous, and 10 apathetic or delinquent.

A great deal has been said in the newspapers and elsewhere about the increase in juvenile delinquency, which might be a sign of mental ill health. In Manchester 1328 juveniles were prosecuted for indictable offences in 1940, compared with 746 in 1939. In Birmingham 1919 children (1720 boys, 199 girls) appeared on serious charges (e.g., larceny, breaking and entering) before the Juvenile Courts during 1940, compared with 1433 in 1939 (1315 boys, 118 girls), and 1190 (1121 boys, 69 girls) in 1938. For the first quarter of 1941, however, there is a drop in Birmingham (351 boys and 49 girls, against 445 boys and 44 girls for the first quarter of 1940). The Home Office and Board of Education Circular (June, 1941) states that returns for the first twelve months of the war, compared with the previous twelve months, indicate an increase in the whole country of 41% in the number of children under 14 found guilty of indictable offences, and an increase of 22% in the age-group 14–17. The official circular points to the chief factors responsible for this. The headmaster of a Liverpool school, author of a recent monograph on juvenile delinquency, writes:

"In my own school there is no sign that the mental health of the children has been upset by bombing—and much serious damage has occurred in the immediate neighbourhood of the school. Even those children (about a dozen) who have had their homes destroyed while they were either in them or in their shelter seem to be perfectly normal in their conduct. . . . I am satisfied that the increase in delinquency cannot be considered as symptomatic of neurosis. . . . The very fact that we were able to forecast the increase, and even, broadly, its amount, is an indication that other causes must be held responsible. Lack of parental control is always the most potent cause of delinquency. . . . As a direct result of the war, much of the abject poverty found among certain classes has gone; but the conditions in which they live remain the same, or often worse when families have to find fresh accommodation. In families where the father is now away from home there will often be a marked deterioration in control. . . . What I have said refers to children who have remained at home. Many thousands of children, of course, are altogether away from the care of their parents, and not all are properly supervised in their billets. This has provided further opportunity for delinquency. Again, the police have less time to spare for the prevention and detection of crime. In other words, the war has caused an all round relaxation of control, with the inevitable result that more children have got into trouble. I have mentioned only a few points; many others such as the interruption to education and the shortage of men teachers could have been enlarged upon. I am not prepared to say that 'greater laxity of external control under war conditions' is the sole cause of the increase in delinquency, but I am convinced that it is the chief one."

It seems proper, therefore, to regard juvenile delinquency as a social malady, still remediable, rather than as evidence of mental ill health in individuals. That is not to say that social ill health is immaterial from the standpoint of mental hygiene; psychopathic disorders of personality, tending towards neurosis, flourish in a bad social soil.

DISCUSSION

The incidence of mental illness in the Fighting Services has not been dealt with here, though in so far as exposure to enemy attacks is concerned, soldiers in this country are in the same position as civilians. Where they differ is in the circumstances of their daily life; the soldier is separated from his family and has very little say in the choice of his military job, and less independence in most respects than he had before. Such social and emotional factors evidently play a larger part than exposure to danger in determining neurotic illness in soldiers while in this country. The incidence is not high, but is higher than in the corresponding civilians, who have presumably found or made for themselves a milieu into which they fit. The psychopathic soldiers who are discharged from the Army as unfit go to swell the ranks of neurotically ill persons in civilian life; they do not, as is sometimes suggested, lose their symptoms as soon as they have obtained their discharge. Their subsequent industrial level, in a random sample of 60 whom I followed up, was lower than before they joined the Army, and they are in most cases unduly upset by air-raids.

The analysis of causes for neurosis is notoriously misleading. It is almost impossible to assign to the various stresses of war their relative importance in producing mental ill health. Certainly, the terrors of an actual air-raid (against which the careful preparations of the Emergency Medical Service were directed, to avert panic and to treat sudden anxiety, stupor, or hysteria) have proved less important than the disruption of homes, and other secondary effects of bombing; and more important than air-raids are the great social alterations of the war (rearrangement of industry, evacuation). It is probable that a lowering of physical health, whether through epidemics or nutritional changes, would lead to a corresponding rise in the incidence of neurotic illness; they are very closely linked. (Compare the London figures for "neurotic symptoms" and "neurosis," table III.)

The mental effect of air-raids varies with local conditions. London, sprawling and many-bodied, can suffer much damage without most of its citizens being personally and directly affected. Plymouth or Coventry, more unified, small and concentrated, can be so devastated that every citizen is affected, and the interference with essential services—food, warmth, light, water—serves to intensify depressive and other neurotic reactions. A non-medical observer (Harrisson 1941) has said that after raids on these towns there are cases of lethargy or stupor which are not seen by doctors; this has been questioned, but in any case his statement that an air-raid means a more personal and upsetting threat to the inhabitants of a provincial city than to Londoners can be accepted, with some of its implications as regards neurosis.

Attention to signs of impaired morale in the population concerns itself chiefly with the premonitory and early signs of neurosis, such as are shown by people who cannot talk of anything else but the bombs for weeks after a raid; paranoid people who suspect strangers of being spies; depressive pessimists who see no chance of their town reviving after all this destruction; anxious worriers about the imminence of the next raid. The number of people showing such behaviour after a raid is unknown, but no-one has asserted that it is considerable, or that the unhealthy manifestations, when they occur, persist long.

Investigation of all these matters is desirable since they affect public safety and public health, and the available data are scanty and in some respects discrepant. Discretion and relevant experience would be essential in any field investigators. The existing state of the law regarding compensation for neurotic disabilities indicates the danger; a woman was recently awarded £700 damages for hysteria and "nervous shock" sustained by merely witnessing a motor-car accident as she walked along the footpath. If for "motor accident" could be substituted "exploding bomb," and for "damages," "injury allowance" or "pension," the situation would be serious, not only for the public exchequer but for the public health. The inquiry could, however, safely and profitably be carried out by properly trained people aware of the pitfalls.

SUMMARY

Air-raids have not been responsible for any striking increase in neurotic illness. Crude figures from hospitals and outpatient clinics even suggest a considerable drop; the Ministry of Pensions figures, however, give a better indication of the problem.

Reliable data from London and Bristol, and the impressions of good medical observers, indicate that after intensive raids there is a slight rise in the total amount of neurotic illness in the affected area, occurring chiefly in those who have been neurotically ill before. Neurotic reactions may not show themselves for a week or ten days after the bombing; they usually clear up readily with rest and mild sedatives. Hysteria is uncommon, anxiety and depression are the commonest forms of upset.

The incidence of neurotic illness has been low in fire-fighters and other workers in civil defence.

Insanity has not increased, so far as figures are to hand, though more persons with senile deterioration have been admitted to mental institutions than before, because their relatives could not any longer look after them or because the raids had in other ways disturbed their routine and their precarious adaptation. The same was true of some defectives.

Suicide has diminished in Scotland, especially among the middle-aged and elderly. Figures for England and Wales are not available.

It is impossible to distinguish between neurotic illness due directly to air-raids and that which may follow such secondary troubles as disruption and loss of one's home, evacuation, difficulties in transport to and from work, or temporary loss of employment. It is to the war as a whole, with its accumulated stresses, that people have had to adjust themselves, and signs of failure to do this can be taken as warning signals of neurosis. An increase in alcoholism would be such a sign; there is no evidence that there has been any increase of this sort. The rise in road and industrial accidents has been considerable; many causes are at work, the psychological ones among which have not been analysed. There has similarly been a rise in juvenile delinquency: this cannot be regarded as tantamount to a rise in juvenile neurosis, but it suggests that the same environmental factors are at work as conduce to neurosis.

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RADIOGRAPHY OF THE FEMORAL NECK

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OPERATIONS on fractures of the femoral neck necessitate accurate, rapid and clear radiography. A combined film holder and pelvic rest is here described which helps to achieve these essentials. Usually lateral pictures of the neck of the femur are taken with the tube between the legs, and the film cassette held manually in the region of the iliac crest. This arrangement has many disadvantages. The film may not be held steadily, or at the correct angle, or in the same position for each exposure; the cassette has to be wrapped in a sterile towel, which causes delay; and finally there is danger of exposing the assistant to direct X rays. The apparatus described here overcomes these disadvantages. It has been in use for about 18 months and even though the cases in which it has been employed have been fibular grafts (lately the grafts have been reinforced by a single fin nail) the definition obtained has been satisfactory (fig. 1). The idea is based on the technique employed with the curved cassette before it fell into abeyance, and on apparatus seen by one of us (K. C. C.) in the Orthopædic Hospital at Copenhagen.

The apparatus (fig. 2) is an addition to the usual perineal bar and buttock rest. It consists of a horizontal cassette holder, to which is attached a vertical curved film support. The buttock rest and horizontal cassette holder are made from two pieces of five-ply wood (15 by 13 in.), which are fixed ¾ in. apart by three small wooden stops, or distance pieces, which also ensure correct and rapid positioning of the cassette for the antero-posterior film. The perineal upright, roughly hemispherical in cross section, is made from a solid wooden block 6 in. high and 4 in. wide at its base. It is let into the horizontal platform close to one side, and surrounded on its curved surface by a piece of three-ply wood; a slot ⅜ in. wide is left between the block and the ply wood to take the special X-ray film pack (fig. 2). The block is bored to fit the perineal bar of a Hawley or other orthopædic table, and is lead-covered to prevent X ray scatter.

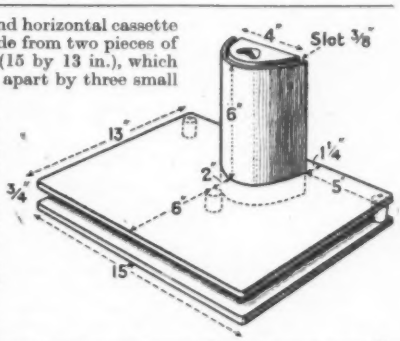

Fig. 2—Horizontal cassette holder and vertical curved film support to fit over the perineal bar of the Hawley or other orthopædic table.

TECHNIQUE

The ordinary pelvic rest and perineal bar of a Hawley table are fixed in position and the apparatus is fitted over the perineal bar. The patient is adjusted so that the perineum fits closely to the upright (fig. 3). The horizontal pieces are prevented from closing under the patient's weight by the central wooden stop. A small X-ray film, 8½ by 6½ in., is used for the lateral exposure. This has been previously prepared as follows:

The film is placed between intensifying screens which are in turn inserted into a film envelope; the envelope is closed and with its contents forms a film pack which

Fig. 1—Lateral and anteroposterior radiograms of the femoral neck; (*a*) and (*b*), fibula graft; (*c*) and (*d*), a single fin central nail used to reinforce the graft.

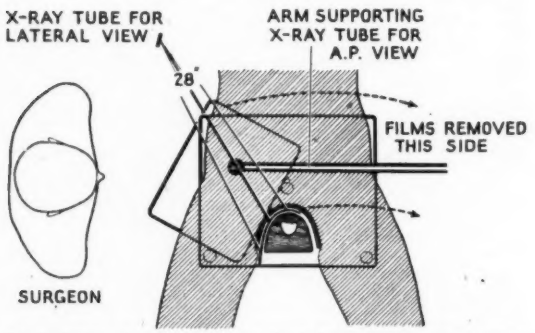

Fig. 3—Patient placed with perineum closely fitting upright; anteroposterior and lateral films in position; two X-ray tubes are in position and the direction of the X-ray beam for the lateral view is indicated. The films are removed from the side opposite to the surgeon.

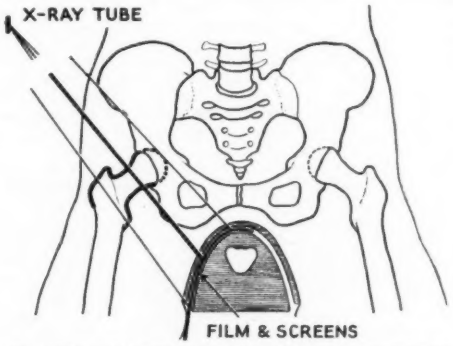

Fig. 4—Film pack in position for the lateral view; alignment between tube, neck of femur and film is indicated.

replaces the usual metal cassette. Special intensifying screens are available for this work; they are coated on a pliable celluloid base and do not crack when used without a cassette in the curved position.

The film pack is gently curved to the shape of the perineal upright, before it is fixed in position between the block and its shield (fig. 4), the correct alignment between film, neck of femur and tube direction is then readily obtained. The two X-ray tubes are placed in position for the anteroposterior and lateral views, and they remain in this position throughout the operation. When the lateral film has been exposed it can be removed from the *opposite* side to the surgeon and the cassette for the anteroposterior picture (10 by 8 in.) inserted from this side. Thus, the surgeon is not disturbed at any time during the operation.

Rapid developer has been abandoned. Instead ordinary developer and fixing solutions which have been heated to 90° F. are used. By this method an X-ray picture which is clear and permanent can be seen in 2 min. from the time the film is exposed (fig. 1).

We wish to thank Mr. S. H. Barr, radiographer at Wellhouse Hospital, and Mr. A. W. Spain, clerk of works at the Royal Northern Hospital, for their assistance.

DEVELOPMENT OF HYPOCHROMIC ANÆMIA DURING PREGNANCY

RESPONSE TO IRON THERAPY

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IT is well known that physiological changes in blood-volume, and the demands of the fœtus on maternal iron reserves, render hypochromic anæmias especially frequent during pregnancy. The characteristic decrease in hæmoglobin percentage, unaccompanied by a fall of the same degree in the red cells, makes the estimation of hæmoglobin the best guide to the adequacy of the woman's iron reserves. The object of the present investigation has been to determine whether the current war-time dietary restrictions have had any detrimental effect on the hæmoglobin concentration of the blood of women during pregnancy. The changes in hæmoglobin percentages have been followed and the results compared with others made on similar groups of cases before the war. At the same time the effects of supplementing the diet with a medicinal preparation of iron have been examined.

METHODS AND CLINICAL SOURCES

All hæmoglobin estimations in the present study were done by one of us (H. P. W.) using the Haldane method (100% = 18·5 c.cm. O_2 capacity = 13·8 g. Hb. %) with a standard tube checked against that used by Price-Jones. Estimations have as a rule been made once a month, but because regular intervals have not always been possible the hæmoglobin alterations during the period of attendance have been calculated as a weekly rate.

The women attended the antenatal clinic of a hospital in the south-eastern suburbs of London between May, 1941, and March, 1942. The neighbourhood is classed as a "neutral" area, but air-raids were both frequent and severe there during 1939–40. Most of the women belonged to the upper artisan and lower middle class; very few could be considered as "poor." The majority were young primiparæ, though for this survey no distinction between nulliparous and multiparous women has been made. The women usually attended the clinic for the first time between the third and fifth months of pregnancy and were examined monthly until the 28th week of gestation, thenceforward fortnightly until the last month, during which they were seen every week. The clinical examinations (by H. A. H.) were of the usual type—i.e., blood-pressure, routine urinalysis and physical examination with X ray or further pathological investigations whenever considered desirable. Apart from earlier estimations, every woman had her hæmoglobin estimated during the last month of pregnancy.

The clinic was held on two days a week, and in order to control the results of treatment with iron all those women attending for the first time on one day were thenceforward given iron as ferri et ammon. cit. (gr. 30 t.d.s.) until delivery, except in a few cases where this preparation was ill tolerated when pil. ferri sulph. in the same dosage was administered. Those who attended on the other day received no treatment with iron, whatever their initial or subsequent hæmoglobin percentages. All cases in which the iron therapy was known not to have been followed have been omitted from this study.

HÆMATOLOGICAL FINDINGS IN PREGNANT WOMEN WITH AND WITHOUT ADMINISTRATION OF IRON

—	GROUP 1 Treated (196 cases)	GROUP 2 Untreated (196 cases)
Av. initial Hb.	75 % (10·25 g. %)	79 % (11·0 g. %)
Av. terminal Hb.	77 % (10·65 g. %)	70 % (9·7 g. %)
Proportion below 70 % Hb. initially	24·5 %	9·2 %
Proportion below 70 % Hb. terminally	14·3 %	40·3 %
Proportion showing improvement (A)	54 %	13 %
Proportion showing no change (B)	9 %	6 %
Proportion showing deterioration (C)	37 %	81 %
Av. weekly Hb. increase in (A)	1·34 %	0·82 %
Av. weekly Hb. decrease in (C)	0·86 %	1·35 %

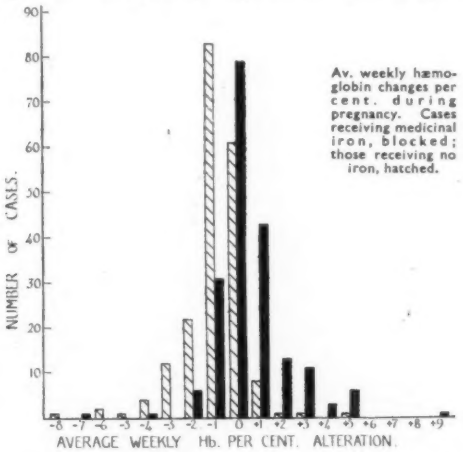
RESULTS

The results of the hæmoglobin estimations for the two groups of treated and untreated cases are set out in the table. The average hæmoglobin percentage on first attendance at the clinic was somewhat higher in the group of untreated women than in the treated group, although no selection had been exercised. The hæmo-

* Gillson scholar.

globin percentages at the end of pregnancy were, however, reversed—in those patients who received iron prophylactically it had increased while in those who were untreated it had decreased.

In order better to show the effects of iron therapy, the two groups have been divided into three subgroups: (A) those who improved, (B) those who remained unchanged, and (C) those whose hæmoglobin fell during the periods of observation. The proportions of cases falling into these subgroups are shown in the table. Of those receiving treatment, 54% showed an improvement, while of the untreated group 13% only improved. The extent of improvement in the two groups was also strikingly different, the average weekly rise in hæmoglobin in the treated cases being 1·34% (Haldane units), while that of the untreated case was 0·82%. Conversely, the proportions showing a decrease in hæmoglobin during pregnancy were 37% and 81% in the two groups. The average weekly falls in hæmoglobin in the subgroups (C) were considerably greater in the untreated than in the treated cases; this figure being 1·35% for the former and 0·86% for the latter. These differences for the two groups are statistically significant. The frequency


Av. weekly hæmoglobin changes per cent. during pregnancy. Cases receiving medicinal iron, blocked; those receiving no iron, hatched.
NUMBER OF CASES.
AVERAGE WEEKLY Hb. PER CENT. ALTERATION.

distribution curves of the weekly hæmoglobin changes are shown in the figure.

There was a considerable difference in the proportions of the two groups initially falling below 70% hæmoglobin. In spite of the initial excess of such anæmic cases in the group receiving iron, an improvement occurred among these women so that at the end of pregnancy they were better than those who had received none. These latter had deteriorated so considerably that the very high proportion of 40·3% had hæmoglobin levels below 70%.

DISCUSSION

Reviewing the published work on the alterations of hæmoglobin percentages in normal pregnancies is difficult because of the many methods of estimation that have been employed. Often no description of the standard used has been given. Furthermore the period of pregnancy when the samples were examined is often not stated, and, if repeated observations have been made, the intervals between the examinations are often omitted. For these reasons, and because of the discrepancies between American and British figures for "normal" hæmoglobin percentages (Price-Jones, Dill and Wright 1931), little attempt has been made to compare the present figures with those reported for pregnant women in other countries. The differences between this series of cases and those reported by other workers in this country shortly before the war may, however, be discussed.

It is now well established that the hæmoglobin percentages of women fall during pregnancy owing to a relative increase in plasma (see Dieckmann and Wegner 1934, Evans 1937), but observers agree that an anæmia of the hypochromic type is often superimposed (Bethell, 1936). Dieckmann and Wegner (1934) and Watson (1938) think that hæmoglobin levels below 10 g. % (72% Haldane) should be regarded as unphysiological. In this country these figures are usually accepted and cases falling below 70% have been regarded as anæmic (Davidson et al., 1935, MacKay 1935, Reid and Mackintosh 1937).

It has been found that the average initial hæmoglobin of 77% for the entire series is lower than the Aberdeen figures collected in 1935. They were not, however, so low as that found by Fullerton (1936) in his group of pregnant women having a weekly family income of less than 15*s.* per head, who had an average hæmoglobin of 73%. The terminal figure of 70% found for the group of untreated cases in the present series falls below that of Fullerton's group, although their economic status was superior to that of the women he examined. MacKay's (1935) group of pregnant women were probably economically intermediate between Fullerton's and the present series. She found an average hæmoglobin of 83·5%, a figure far higher than that for the present series.

When the criterion of a hæmoglobin level below 70% is taken as the lower limit of normality, 16% of the entire series fell initially below this figure. This is only slightly better than that for the Aberdeen group of 17·5% and that for Fullerton's first group (less than 15*s.* per head weekly), 19·5% of whom fell below this level. The present series is worse than Fullerton's second group of women with over 15*s.* per head of family weekly, 14·3% of whom fell below this standard, while of MacKay's series only 4·6% had hæmoglobins below 70%. The proportion falling below 70% hæmoglobin at the end of pregnancy in the untreated group in the present series is considerably greater than any hitherto recorded, 40·3% showing such pronounced anæmias.

In the group of treated cases the terminal hæmoglobin concentration in the women's blood may be regarded as satisfactory. Even allowing that patients attending clinics sometimes take medicinal preparations irregularly, especially if these are unpalatable, the average hæmoglobin percentage rose during the period of observation, while the numbers falling below 70% hæmoglobin declined from 24·5% to 14·3%. The fall in the subgroup (C) was slight and within physiological limits. This transforming of a fall into a rise of hæmoglobin level in pregnancy in women treated with iron supports the findings of other workers (Galloway 1929, Toland 1936, Corrigan and Strauss 1936, Gottlieb and Strean 1939, Widdowson 1939).

No single factor has been found to account for the low levels of hæmoglobin percentages in the present series. The women when first seen already had hæmoglobins lower than is usual at that stage of pregnancy, so it is probable that they started their pregnancy with some degree of anæmia which became progressively worse. Though in some instances they complained of fatigue, giddiness or breathlessness, they were generally surprisingly well and able to continue their normal occupations. Financially their conditions had altered comparatively little since the beginning of the war, the chief changes having been brought about by the rationing of foodstuffs. Strauss and Castle (1933) found that anæmia developed during pregnancy if there were dietary or digestive disturbances, while Reid and Macintosh (1937) observed that the poorer the financial condition of the women examined the lower the hæmoglobin percentages tended to be. Davidson and his colleagues (1933, 1935) pointed out that the diets of low paid and unemployed workers were deficient in iron. It appears likely, therefore, that at the present time the condition of these pregnant women simulates that found ordinarily in women of lower financial status, and that diets containing insufficient iron are more frequently taken than in normal times. It is important that milk is the only supplementary food allowed to women during pregnancy and that this contains no iron, so cannot combat the development of nutritional iron deficiency anæmias.

It appears from the figures obtained for this series, which may be taken as a fair sample of the pregnant women in the artisan population of the country, that the present condition of their blood is unsatisfactory and considerably worse than before the outbreak of war. Two main methods of overcoming the development of hypochromic anæmias appear to be possible. First, the administration of therapeutic iron preparations in

adequate dosage should find a routine place in antenatal treatment. Secondly, training in simple dietetics at the clinic centres might be organised to help the women to choose foods rich in iron and to prepare them in the most appetising manner.

SUMMARY

Repeated hæmoglobin estimations by the Haldane method have been carried out on 392 pregnant women from about the third month of gestation until term.

Half of the women examined were treated with medicinal iron throughout the period of observation, while the rest had no such medication.

The average initial hæmoglobin percentages were 79 in the untreated and 75 in the treated group. The corresponding average terminal percentages were 70 and 77, so that iron administration converted a deterioration during pregnancy into an improvement.

From comparison with other published figures it is concluded that women of the artisan class are more anæmic than before the war.

Iron preparations should be given as a routine during pregnancy and antenatal clinics should help expectant mothers to select and prepare iron-rich diets.

We wish to express our thanks to Dr. Constant Ponder, medical officer of health for the county of Kent, for facilities afforded in connexion with these investigations.

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Medical Societies

DRIED FOODS

THE Nutrition Society held its sixth meeting (fourth of the English group) on July 25 in conjunction with the Food Group of the Society of Chemical Industry, the subject being Dehydration of Foods and its Effect on their Nutritional Value. The work reported was carried out mainly under the Food Investigation Board of the Department of Scientific and Industrial Research, and Sir EDWARD APPLETON, secretary of that department, took the chair at the morning session. The advances made in the study of drying foods were, he said, the result of excellent collaboration between the Low Temperature Research Station at Cambridge and the Torry Research Station at Aberdeen, which studied the technical methods of drying, and the Dunn Nutritional Laboratory at Cambridge at which the nutritional value of the foods was determined. Much help had also been forthcoming from industry. The function of scientists in war-time was not only to satisfy particular needs of Service or civil departments but also to anticipate likely needs. The drying of foods, the study of which was taken up by the Food Investigation Board under the chairmanship of Sir JOSEPH BARCROFT soon after the outbreak of war, was an example of such anticipation. It had been calculated that some three million tons of water were imported annually with our food, so that drying could affect considerable saving in transport, labour and storage. Dried foods have been known for a long time but have always been considered much inferior to fresh foods. This was rightly so, for little study had been made of the best way to preserve their palatability and nutritional qualities. But the progress made in the last few years was bringing us closer to one of our most important aims: the provision of the best food for the United Kingdom and our Allies and ultimately the whole world.

Mr. FRANKLIN KIDD, DSc (Low Temperature Research Station), in a paper on the principles and practice of food dehydration, stressed the differences between the old and the new methods of drying. Until recently, dried foods were definitely a second best. The extension of food preservation just before the war was mainly in the form of refrigeration. This was really a form of drying, in that the water, being converted into ice crystals, was in effect removed from the food. An elaboration of this was vacuum ice-drying, in which the ice crystals in the frozen food were evaporated off without thawing. This process proved very successful but its development in war-time was impracticable, because the bulk of the food was not reduced and manufacture of the requisite industrial plant would have involved much time and labour. Further work was therefore confined to the study of other methods of drying and there had emerged several general principles which guide the preparation of satisfactory dried foods. For example, a preliminary heat treatment is necessary to inactivate the enzymes which will otherwise cause deterioration of the food. The final product should be kept in a dry atmosphere; oxidation can be guarded against by the exclusion of air and of catalysts such as metals and by the addition of antoxidants such as sulphite. But no method of preparation can produce dried food of good quality from fresh food of poor quality. Dr. Kidd gave some examples of the saving effected by drying. Dried carrots are $\frac{1}{13}$ of the weight and $\frac{1}{10}$ of the volume of fresh carrots. Not all foods show this amount of saving but a complete week's ration could be produced whose weight and volume would be about a quarter of that of the equivalent fresh foods.

MEAT, EGGS AND FISH

Mr. E. C. BATE-SMITH, PhD (LTRS), read a paper on dried meat and eggs, written in collaboration with Miss E. M. Cruickshank, PhD (Dunn Nutritional Laboratory) and Mr. J. G. Sharp, PhD (LTRS). Meat and eggs are valuable mainly for their protein and caloric value rather than for their vitamin content and they also provide highly palatable constituents of the diet. In the preparation of these dried foods they were therefore guided mainly by the criterion of palatability, but it was found that the conditions which best preserved this were also those which least affected their nutritive value. The best method for meat was found to be the air drying of the coarsely minced meat at about 60° C., and by this method the digestibility and biological value were as good as those of cooked fresh meat. Rotary steam drying in a vacuum was also effective provided the temperature was not allowed to rise too much. Temperatures above 80° C., for example, destroyed some of the vitamin B_1, and commercial rotary driers destroyed all of it. Preliminary work on nicotinic acid and riboflavin indicated that these are also unaffected at the lower temperatures. With eggs, it is important to retain the power of reconstitution and only air drying can do this. Here too, if the temperature is kept low, as in spray drying, no deterioration of palatability or nutritive quality occurs; on the other hand, band drying, in which low temperatures are also used, results in loss of some of the vitamin activity owing to the lengthiness of the process. The palatability of many samples of both meat and eggs have been tested by panels in several parts of the country, and products agreed to be highly palatable are now relatively easy to obtain.

Mr. G. A. REAY, PhD (Torry Research Station), spoke on the drying of fish. Although drying, with or without salting, has been carried out for centuries, this is always accompanied by considerable changes in flavour and palatability. Modern methods, which so far have been confined to the drying of lean fish, have produced fish which compare favourably in quality with fresh fish. The fish is first cooked and then either roller dried, or, better, air-dried on trays. The dried product reconstitutes very well and tastes nice. Its volume is $\frac{1}{3}$ to $\frac{1}{5}$, and its weight $\frac{1}{4}$ to $\frac{1}{5}$ that of fresh fish. As a rule it keeps well but some samples have deteriorated after a few months. The problem of storage clearly requires further work.

Mr. NEVILL WRIGHT FIC, of New Zealand, appealed for a pooling of the mass of knowledge which must have been gathered by those working on the problems of food drying in many countries.—Dr. A. S. MACFARLANE

(Lister Institute) agreed with Dr. Kidd that suspension of the method of vacuum ice-drying during war-time was reasonable but emphasised two advantages of this process. First, products prepared by this means can be reconstituted on the whole better than those prepared by other means; especially is this so with milk and fruit juices. Secondly, they have a smaller surface area than, for example, spray-dried foods and consequently are less liable to oxidation. Mr. D. H. F. CLAYSON, BSc, urged the importance in these days of fuel economy of studying the relative efficiency of various types of drying apparatus.—Mr. C. E. SPOONER, MScTech, said that the drying efficiency of many methods now used is in fact very good. He suggested that the replacement of oxygen in the storage containers by an inert gas such as nitrogen might improve the keeping qualities of the products.—Mr. R. T. COLGATE, DSc, thought that the preparation of dried eggs presented problems similar to those encountered in the preparation of wheat gluten, of which he had had experience. This substance preserves its aerating qualities much better when vacuum dried than when dried in the air; the same is probably true of eggs.

In their replies Dr. KIDD said that experiments are being done on the effect of storing the dried products in inert gases, and Dr. BATE-SMITH assured Mr. Clayson that the question of fuel consumption in the drying process is being studied, though this represents only a small fraction of the total cost of preparation.

VEGETABLES

At the afternoon session, with Mr. H. E. COX, DSc, chairman of the Food Group, in the chair, a paper by Mr. R. J. L. Allen, PhD, Mr. J. Barker, PhD (LTRS), and Mr. L. W. Mapson, PhD (DNL) on dried vegetables was read by Dr. ALLEN. The three desiderata are retention of colour, retention of maximal nutritive properties and preservation of both during storage. Taking cabbage as an example, the procedure is to cut the trimmed cabbage into thick shreds and scald for 2 or 3 minutes in water containing a little sulphite. The scalding reduces the quantity of vitamin C but this effect can be minimised by reducing as much as possible the volume of the solution and the time of scalding and by using the same solution for repeated scalds. By this means cabbage can be dried so as to contain 70–80% of its original vitamin C. If it is then cooked as recommended it will retain some 35% of its vitamin C, a figure which compares favourably with the amount left in the cooked fresh vegetable. Carrots and potatoes have also been successfully dried, the process differing only in detail from that used with cabbage. Carrots are scalded whole and then sliced. With potatoes, it is necessary to choose suitable varieties and avoid the presence of iron in order to prevent blackening of the final product. These dried vegetables keep well in storage for at least a year.

Mr. V. L. S. CHARLEY, BSc (Long Ashton Research Station), considered that one of the most important results of these new methods of food preservation would be that vegetables, now grown in such quantity, would be saved from wastage; they could then be distributed in the two or three months when there is a shortage. He wondered what the attitude of the Ministry of Health would be to the presence of sulphur dioxide in these products and also questioned the need for so much waste in preparing the vegetables before drying; he understood that as much as 50% of cabbage and 20% of carrots are so wasted. Could not the scalding water, with its vitamin C and mineral salts, be incorporated in some way in the final product?—Mr. T. RENDLE, FIC, referred to the commercial preparation of these dried products. A considerable amount of work has already been done with pilot plant and a start has been made with plant for large-scale production.—Mr. B. G. MCLELLAN, MIChemI, suggested that those concerned in the drying of foodstuffs should get in touch with engineers who would be willing to coöperate fully in the development of methods of large-scale food production. It would be of great benefit if the plant were erected in the growing areas and also if small-scale plant could be made available to deal with surplus vegetables from gardens and allotments.

Dr. ALLEN, in reply, said that with some varieties of cabbage the wastage is much less than 50% and in fact parts ordinarily discarded can often be incorporated in the preparation; they may indeed improve both its colour and nutritive value. Most of the SO_2 used in the process is eliminated during the later stages of preparation. It is difficult to incorporate the water used for scalding because of the high amounts of SO_4 in this.—Dr. MAPSON, who was responsible for the nutritional part of the investigation described by Dr. Allen, pointed out that the principles discovered in this work could readily be applied in domestic working; for example, preservation of the vitamin C by cooking in water in which the inedible vitamin-rich portions had just been boiled. In some respects it is easier to preserve this vitamin in the dried vegetables, since bruising and enzyme action which causes loss in fresh vegetables do not occur with the dried products. Loss after cooking due to oxidation of the vitamin when the cooked vegetables are kept hot will occur equally with either type, but the ease with which the dried vegetables can be reconstituted and cooked may eliminate the need for the use of the hot plate in canteens.

UTILISATION

The last paper of the day, on the utilisation of dried foods, was read by Sir JOSEPH BARCROFT. Previous speakers had stressed the advantages of the new processes in storage, ease of cooking and so on but he felt that quality was of equal if not greater importance. The adoption of drying means that a greater proportion of people will have easily available foods of high quality. Some food suppliers may think these products offer unfair competition but only "fresh" foods of poor quality—stale fish and stale milk—will be affected. The process of drying has of course other advantages: an important one is the avoidance of wasting foods during periods of high production or gluts. Seasonal gluts, such as the high yield of milk in early summer, will be easier to deal with than the unpredictable gluts of an exceptionally good yield, but even these could be dealt with, at any rate partially, by appropriate organisation. Ease of cooking, anther feature of dried foods, would considerably affect not only cooking in canteens but also domestic cooking.

Squadron-Leader T. F. MACRAE, PhD, spoke of the use of dried foods in RAF canteens. They are popular with cooks, catering officers and medical officers. They supply a variety of palatable foods which it is otherwise not always possible to obtain and considerably reduce the time and trouble of preparation. Tests have shown that meals prepared from dried vegetables provide about twice as much vitamin C as those prepared from fresh vegetables, mainly owing to the difference in the losses during cooking. In palatability tests dried cabbage, for example, was taken at least as well as the fresh vegetable.

Mr. J. HAMMOND, DSc, FRS (Cambridge School of Agriculture), said that dried foods would affect production, distribution and storage, and consumption. Production would be affected by the fact that they would make it possible to deal with gluts. There are parts of the world, such as Rhodesia and Northern Australia, which might produce large amounts of meat but which at present cannot be exploited owing to the difficulty of feeding workpeople in these areas; this could be overcome by supplying workers with dried foods. Dried foods would make distribution much easier and cheaper; they should greatly lessen the difficulties of postwar relief. The fact that dried foods can be stored and readily transported means that there can be a more uniform supply of foods throughout the year for people of moderate means.

* * *

The meeting did not deal entirely with these theoretical aspects of drying foods. Demonstrations showed how rapidly dried cabbage and potatoes could be reconstituted, and samples of dried foods, both as stored and as prepared for eating, were on view. Minced meat and fishcakes, with cabbage, potatoes and carrots were there for members to taste, and the general opinion was that it was impossible to guess that they were not ordinary fresh foods.

M. Maisky, the Soviet ambassador to this country, has given £100 to the Anglo-Soviet Medical Council for their future work.

Reviews of Books

After-Treatment

H. J. ATKINS, D.M., M.Ch. Oxfd, F.R.C.S., assistant surgeon to Guy's Hospital, London. Oxford: Blackwell. Pp. 266. 15*s*.

THIS guide for all doctors and nurses who have the care of patients after operations is the more valuable for its emphasis on the human side of treatment and the common-sense approach to problems of convalescence. The size is just right, it is not overburdened with unpractical discussions, and the advice given is sound and simply expressed. There is little to criticise, but if Mr. Atkins would consult Murphy's original writings on the rectal administration of water, he might alter the views expressed on p. 11. The rectum should never be called upon to accommodate 5 pints of saline, nor can the surgeon do anything to influence the absorption by the rectal and colonic mucosa; yet if fluid is given by the original method 7–8 pints may be absorbed in comfort by a dehydrated person. Surgical opinion is veering away from soaks for septic fingers though there is much to be said for them. There is no need to use the noisy Sprengel pump for keeping a patient with a suprapubic opening dry: the old-fashioned simple gravity suction pump is as effective. Hexamine, recommended as a urinary antiseptic, has been discarded by most urologists. The direction to use "half-strength hamamelis solution" for stopping vesical hæmorrhage is ambiguous; and an unusually gloomy picture is presented of the result of hydrocele operations. Care of a colostomy is extremely well and carefully detailed. The appendices advise about report-writing and the giving of evidence in a court of law. The book is one of the best and most attractive on a subject often insufficiently mastered by the newly qualified doctor.

Lymphatics, Lymph and Lymphoid Tissue

Their Physiological and Clinical Significance. CECIL KENT DRINKER, M.D., D.Sc., professor of physiology, school of public health, Harvard University; JOSEPH MENDEL YOFFEY, M.D., F.R.C.S., senior lecturer in anatomy, University College of South Wales, Cardiff. London: Humphrey Milford, Oxford University Press. Pp. 406. 22*s*. 6*d*.

THE physiology of the extravascular circulation and the lymphatic system continues to fascinate experimental physiologists. This well-illustrated volume, which is the second Harvard University monograph in medicine and public health, reviews the structure and the experimental and applied physiology of the lymphatic system in mammals. Neither physiologist nor clinician will find it too technical. The mechanism and control of capillary permeability and the composition of the tissue fluids are considered in detail; and they have never been of greater general interest than in these days of universal chemotherapy with the sulphonamide compounds. The influence of the lymphatic system on the spread and control of bacterial and virus diseases and the mechanism by which particles and bacteria gain access to the tissues and lymphatics of mucous and serous membranes are fully discussed, and other topics critically considered are the embryology and evolution of the lymphatic apparatus; the characters of lymphocytes (which incidentally move faster than leucocytes); the relationship of lymphocytes to other cells; the influence of various forms of physiotherapy on the circulation of lymph and, therefore, on the general circulation; and the rôle of the lymphatic apparatus in circulatory disorders such as hypertension, nephrosis, acute inflammation and surgical shock. Those who wish to pursue the subject beyond the confines of this book will find the abundant bibliography an asset.

Surgery of Modern Warfare

(2nd ed.) Editor: HAMILTON BAILEY, F.R.C.S. Edinburgh: E. and S. Livingstone. Vol. I. Pp. 480. 40*s*.

THE re-issue in two volumes of this now well-known work has given its editor the opportunity of some regrouping. The first volume before us is concerned with wounds in general, and with those of the blood-vessels, head, face, spine, chest and abdomen in particular. Lack of balance between the various sections has not been entirely adjusted; 30 pages are devoted to the exposure of the main vessels of the limbs—a subject more suited to a book on surgical anatomy—whereas wounds of the thorax are dealt with (albeit admirably) in 20. The sections on injuries of the brain and skull by Mr. Norman Dott and on wounds of the face and jaws by Mr. Pomfret Kilner are among the best in the book, and both are beautifully illustrated. At present, when many young surgeons are being called on to carry out operative work of a type in which they have had little experience, this book will prove a welcome guide.

Surgery of Head and Neck

ARTHUR S. MCQUILLAN, M.D., F.A.C.S., clinical professor of surgery, New York University Medical College. London: Humphrey Milford, Oxford University Press (Medical Outline Series). Pp. 138. 12*s*. 6*d*.

THIS book covers general surgery in outline. In his preface, Professor McQuillan states his wish that it may "prove worth while as an aid to the undergraduate student, the interne and the practising surgeon." We feel doubtful about the value of any sort of medical outline for the student, who should gradually attain knowledge of his subject and not stuff himself with facts and figures. No stress is laid on general principles, even in the discussion of tuberculous disease of the cervical spine. But for the hospital resident and practising surgeon the book may serve a useful purpose despite the excessive, and not always orderly, tabulation. The general arrangement is satisfactory and on the whole the facts given are reliable and up to date, although epulis is listed among malignant tumours of the gums and jaws, and under brachial plexus injuries only the lower-arm type of paralysis is mentioned.

Pediatric Gynecology

GOODRICH C. SCHAUFFLER, M.D., assistant clinical professor of obstetrics and gynecology, University of Oregon medical school. Chicago: Year Book Publishers; London: H. K. Lewis. Pp. 384. 27*s*. 6*d*.

THIS well-illustrated book is, as Professor Schauffler claims, a pioneer work on subjects which have apparently never been grouped together before. He does not aim at being exhaustive on all diseases peculiar to the female child, but has selected those which in his experience and that of his colleagues present special difficulties in diagnosis and treatment. Pyelitis and enuresis are discussed fully and British urologists will welcome the observation that minor developmental abnormalities are often found associated with recurrent attacks of pyelitis. He considers that only 5–10% of enuretic patients can be shown to have an organic lesion. The ætiology, diagnosis and treatment of pelvic peritonitis are thoroughly discussed and a section on the vexed question of vulvo-vaginitis deals fully with treatment. It seems that American workers have been disappointed with sulphonamides given by mouth. Endocrine deficiency and associated genital undevelopment are discussed and should stimulate research in a field that has hitherto been somewhat neglected here. The last chapter, on the social service aspects of pædiatric gynæcology, deals with the practice of American law, but its principles are of wider application.

Sanitary Inspector's Handbook

(5th ed.) HENRY H. CLAY, F.R.San.I., F.I.S.E., major R.A.M.C. London: H. K. Lewis. Pp. 534. 18*s*.

THE original sanitary inspectors were inspectors of nuisances, their work was not specialised and they were generally untrained. Later they became lay assistants to medical officers of health to do what they were told to do without needing much special erudition. The advance of public health led to their work becoming highly specialised, partly divorced from that of other technicians in the service, and calling for experts of a new type, highly trained and capable of bearing responsibility. Textbooks were therefore needed: by students for the qualifying examination, by practitioners for reference. The need was poorly filled until Mr. Henry Clay brought out his handbook in 1933; it was a big book and has increased in size with each edition, but it contains nothing superfluous. What is to be known is put concisely by an expert of long and varied experience who is an examiner of standing and whose writing is neither vague nor dictatorial. The popularity of Clay is therefore not surprising.

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THE LANCET

LONDON: SATURDAY, AUGUST 15, 1942

PRACTITIONER AND PATHOLOGIST

THE medical student spends a good deal of time in learning how laboratory examinations of the blood, tissues and body-secretions help in the diagnosis of disease. When he goes into practice, he soon discovers that if he wants laboratory tests done he must either call out an expensive consultant or send his patient to the outpatient department of a hospital, whence, too often, there is no return. True he may send throat-swab or sputum or even blood and fæces to the public-health laboratory for help in the diagnosis of infectious diseases like diphtheria, tuberculosis and typhoid, but these infections form a small part of his practice, and so the practitioner soon forgets much of what he had learned about laboratory aids to diagnosis. What he needs is a diagnostic centre to which he can send or take his patient for a blood-count, gastric analysis or renal-function test, and where he himself can get expert advice from the pathologist for a nominal fee. In this way he keeps his patient, and learns much medicine. A service along these lines has for some time been working satisfactorily in Kent where the cost of the laboratory work is a charge on the county rate.[1]

In hospital the clinician, from houseman to honorary, is too apt to regard the pathologist as the servant of his craft, and to demand of him all manner of tests which may or may not be essential to diagnosis or treatment. This overdependence on the ancillary aids to diagnosis—and the X-ray department suffers as much as the laboratory—may, if carried too far, lead to a decay in the practice of sound clinical medicine which attempts first to establish the diagnosis by interrogation, observation and physical examination. Perhaps the clinician is not sufficiently versed in the uses and significance of modern laboratory tests[2]; he must not cloak his ignorance by asking for a whole series of examinations which may add little to diagnosis and will certainly absorb much time and energy in the laboratory. Closer liaison is needed between the ward and the laboratory, with more frequent bedside and telephone discussions between clinician and pathologist about the nature of the case and the laboratory tests which are most likely to be helpful. The pathologist naturally gets exasperated if the clinician regards the laboratory merely as a machine for turning out reports. And now that increasing shortage of staff means curtailment of work it is more important still to eliminate unessential tests. Examples of the avoidable are complete blood-counts on patients with no clinical signs of anæmia: in case of doubt a simple hæmoglobin estimation is enough. Blood-sugar curves are not required—but are often requested—in confirmed diabetes. Fractional test-meals are seldom necessary: examination of the fasting juice after a charcoal biscuit the previous evening will usually give all the needed information. Another grievance is that patients who are readmitted or transferred to another hospital must have a new set of laboratory tests done when the telephone or a polite note would elicit the collected data without further trouble to patient or pathologist. Housemen have to pander to the foibles of the honorary, and on the day before the big visit they flood the laboratory with requests for examinations which might "interest the Chief," but will add nothing positive to the diagnosis.

Let it be more widely recognised that the pathologist is not a technician but is as a rule a man with a wide and accurate knowledge of medicine which he is glad to put at the disposal of his clinical colleagues. Let there be an end to the spirit of armed neutrality which sometimes exists between ward and laboratory and let us have in its place a friendly partnership which will bring benefit all round. Such a partnership can best be achieved by including a period of laboratory work in the training of the resident medical officer, so that later on he will properly appreciate the place and function of clinical pathology vis-à-vis clinical medicine. In this we can learn much from our American cousins.

1. Ponder, C. *Lancet*, 1941, ii, 582.
2. If so he should read "Biochemistry of Disease" by Meyer and Oscar Bodansky. New York and London: Macmillan. 1940. Pp. 684.

PENICILLIN PURIFIED

IN the last two years CHAIN, FLOREY and their colleagues[1,2] in Oxford demonstrated that a partially purified preparation of penicillin, a substance first produced from the mould *Penicillium notatum* by FLEMING[3] in 1929, possesses remarkable antibacterial activity against certain organisms and with its low toxicity has therapeutic possibilities. The penicillin preparation first used for therapeutic trials on man inhibited the growth of a number of gram-positive bacteria at a dilution of 1 : 1,000,000. Yet it could be injected intravenously into mice in substantial doses without producing ill effects and could be successfully given by the same route in the treatment of bacterial infections in man. A considerable further purification of penicillin has now been reported by ABRAHAM and CHAIN[4] and the biological properties of the new product have been studied by FLOREY and JENNINGS.[5] Its antibacterial activity is much greater than that previously obtained, the new preparation inhibiting the growth of staphylococci completely at the astonishing dilution of 1 : 25,000,000 and partially at a dilution of 1 : 160,000,000. Other gram-positive bacteria, though not tested with the purest penicillin, which is scarce, are also inhibited at high dilutions. As FLEMING showed, the gram-negative organisms are less sensitive to penicillin than the gram-positive ones. However, a preparation of penicillin only half as pure as the best obtained has been found to inhibit the growth of *Salmonella typhi* and *S. gaertneri* at a dilution of 1 : 30,000 and to have some effect at 1 : 120,000. Toxicity might have been expected to increase with antibacterial activity, but in fact the toxicity of the highly purified preparation is less than that of the earlier partially purified ones. A dose of 20 mg. of a penicillin preparation with half the antibacterial activity of the purest obtained had no apparent effect when injected intravenously into a 20 gramme mouse.

1. Chain, E., Florey, H. W., Gardner, A. D., Heatley, N. G., Jennings, M. A., Orr-Ewing, J. and Sanders, A. G. *Lancet*, 1940, ii, 226.
2. Abraham, E. P. et al. *Ibid*, 1941, ii, 177.
3. Fleming, A. *Brit. J. exp. Path.* 1929, **10**, 226.
4. Abraham, E. P. and Chain, E. *Ibid*, 1942, **23**, 103.
5. Florey, H. W. and Jennings, M. A. *Ibid*, p. 120.

This is a dose of at least 5000 " Oxford units," [6] and the effective therapeutic dose used in experiments on mice was 5–10 units subcutaneously at three-hourly intervals. These figures give some idea of the great latitude between an effective therapeutic dose and one which a mouse will tolerate without toxic symptoms. A dose of 10,000 units in the form of a much cruder preparation given to a man produced well-marked bacterial inhibition in his blood for at least an hour. Other evidence of low toxicity was that human polymorph leucocytes survived for an hour in a 1% solution of purified material. In view of the very low toxicity of penicillin it may be possible to maintain concentrations in the tissues which will bring at least some of the gram-negative organisms within its therapeutic reach.

Purified penicillin is a chemotherapeutic agent even more remarkable than the studies of the partially purified product foreshadowed. It is almost equally active against many gram-positive organisms. It is many hundred times as active as the sulphonamides and at the same time less toxic than the least toxic of those drugs. Its antibacterial activity is not affected by tissue constituents, or within wide limits by the number of bacteria present. It has been shown to be active against sulphonamide-resistant streptococci,[5] a property which promises to be of great value. Lately a number of antibacterial substances of various chemical constitutions have been isolated from fungi and bacteria (gramicidin and tyrocidin,[7] actinomycin,[8] citrinin,[9] penicillic acid,[10] streptothricin,[11] gliotoxin,[12] proactinomycin.[13]) The available evidence suggests that these substances will prove to be many times more toxic than penicillin and it remains to be seen whether any of them will stand the test as clinical chemotherapeutic agents.

Though penicillin has been purified to a high degree ABRAHAM and CHAIN have not yet obtained it in a crystalline form, and it is therefore not certain that their purest preparation possesses the highest possible degree of purity. From the analytical figures of the purest penicillin preparation formulæ such as $C_{24}H_{32}O_{10}N_2Ba$ and $C_{23}H_{30}O_9N_2Ba$ have been suggested.[14] The nitrogen content of penicillin is remarkable since nearly all substances hitherto isolated from fungi have been nitrogen-free. The tentative formulæ of penicillin, with data obtained by spectrophotometric analysis,[15] suggest that several condensed hydroaromatic ring systems are present in the molecule. Obviously penicillin is a complex molecule, and its instability towards acids, alkalis, heavy metals and many other chemical reagents makes the task of elucidating its chemical structure more than usually difficult, so that the prospect of synthesis still seems remote. For the time being at least it will be necessary to rely on production by the mould, but in view of its potentialities methods for producing penicillin on a large scale should be developed as quickly as possible.

6. An Oxford unit is that amount of penicillin which when dissolved in 50 ml. of meat-extract broth just inhibits completely the growth of the test strain of *Staphylococcus aureus*.
7. Dubos, R. and Hotchkiss, R. *J. biol. Chem.* 1941, **141**, 155.
8. Waksman, S. A. and Woodruff, H. B. *J. Bact.* 1940, **40**, 581; *Proc. Soc. exp. Biol. N.Y.* 1940, **45**, 609; *J. Bact.* 1941, **42**, 231.
9. Raistrick, H. and Smith, G. *Chem. and Ind.* 1941, **60**, 828.
10. Oxford, A. E., Raistrick, H. and Smith, G. *Ibid*, 1942, **61**, 22.
11. Waksman, S. A., Woodruff, H. B. *Proc. Soc. exp. Biol. N.Y.* 1942, **49**, 207.
12. Weindling, R., Emerson, O. H. *Phytopathology*, 1936, **26**, 1068.
13. Gardner, A. D. and Chain, E. *Brit. J. exp. Path.* 1942, **23**, 123.
14. Abraham, E. P. et al. *Nature, Lond.* 1942, **149**, 356.
15. Holiday, E. R. *Brit. J. exp. Path.* 1942, **23**, 115.

PÆDIATRIC PLANNING

AMONG the 21 classical references to the child, thought to be worthy of inclusion in *Familiar Quotations*, there is only one which relates him to the adult—Wordsworth's " The Child is father of the Man." He may be curious or simple (Wordsworth again), or naked (Wm. Jones), or happy (Ann Taylor), or tired (Shelley), or thankless (King Lear). He may be the object of yearning (King John), or of prayer (Longfellow), the embodiment of misery (Langhorne), or of suffering (Holmes). He may have a heart appropriate to the last roll-call (The Newcomes) and a speech remembered by St. Paul, but it has been left to medicine to regard him as only a smaller edition of his parents and showing the same morbidities in lesser degree. In London there is no professorial chair of pædiatrics and in the last prewar year seven provincial universities only allotted 5½*d.* out of each £100 of their grant money to the special teaching of child health. But a new outlook dates from the foundation in 1928 of the British Pædiatric Association, and at its fourteenth annual meeting held at Windermere in May under the presidency of Prof. L. G. PARSONS the more recondite problems of disease in childhood were laid aside in favour of a wide discussion of pædiatric planning. This association of consulting pædiatricians and university teachers of pædiatrics in the British Isles has developed from an academic club into an advisory and executive body willing to bear the increasing responsibilities facing it.

Conference turned on three main branches of pædiatrics: domestic practice, public pædiatric services (such as child welfare and school medical services), and the hospital and institutional treatment of children. After the war domestic practice will presumably remain largely in the hands of general practitioners or members of group practices specially interested and trained in children's diseases. Obviously therefore the standard of undergraduate training in pædiatrics should be raised, encouragement being given by the simple expedient of questions at the final professional examination, and/or a period of postgraduate service in a children's unit required of all who aspire to treat the young. The establishment of university centres, adequately staffed with both whole-time and part-time pædiatricians, is the logical means not only of raising the general level of pædiatric education, but of providing consulting centres and special training. At present it appears that less than 10 per cent. of those engaged in child welfare and school medicine have held resident posts in children's hospitals. Overseas pædiatricians find it hard to believe as we find it to explain that there is no special chair in London, and only one in the rest of England, although both Edinburgh and Glasgow have established units. To find an example of how such university centres, concerned with child health and with disease in childhood, may form a liaison between practitioners, public health workers, consultants, and research workers, one must go (if one could) to Gothenburg. The problems will need handling differently in the London area and in the Provinces. Thus whilst provincial medical schools would naturally have a single pædiatric unit in the shape of a children's hospital in close liaison with the ancillary services of the university and the local public health authority,

in London there are numerous special hospitals while each teaching hospital has its own children's unit. The number of local authority areas from which patients are drawn in Greater London alone is formidable. Much of the overlapping and duplication that now exist will have to be eliminated; each medical school might adopt an existing children's hospital as its teaching unit, other children's hospitals serving as centres for postgraduate teaching. Of equal importance for the future of pædiatrics is a high standard of training for children's nurses; it would be lamentable if the idea prevailed that a nurse with general training who has had one or two months in a children's ward is therefore competent to become a sister in a children's ward, and it would be a retrograde step for the General Nursing Council (as has been suggested) to abolish the register of sick children's nurses.

Regional planning offers scope greater perhaps in pædiatrics than in any other specialty. At present few towns possess even one highly trained children's specialist, and in many areas none but the well-to-do can obtain competent pædiatric advice. The wide establishment of consulting centres for practitioners, staffed by visiting pædiatricians on a regional basis, would not only raise the standard of children's practice, but also provide expert advice for welfare workers and school medical officers. The strictly consultant status of the centres would not infringe the province of either the public or private practitioner. Their value has already been proved in the case of orthopædics, and pædiatric centres are more than ever needed in view of the large-scale evacuation of children to rural areas. The EMS provides the basis of a skeleton scheme which could be expanded rapidly. Unfortunately pædiatric planning for the postwar years is overshadowed by the more immediate sequelæ of war. The probable increase in tuberculous infection during childhood, the almost certain increase in juvenile delinquency consequent on evacuation and broken homes, and the possibility of a serious lowering of nutritional standards, all call for immediate consideration. It is a hopeful sign that nutritional problems are being realistically faced by the provision of communal feeding in schools, and in many places schoolchildren are being taught to grow as well as to cook and serve much of their own food. That the value of the midday meal at school, both to themselves and their parents, is appreciated by many children has already been shown by one enterprising county education committee.[1] The memory of conditions that prevailed in Europe at the close of the last war should suffice to put pædiatric planning on the map.

AZOTÆMIA AFTER ALIMENTARY BLEEDING

IT is a commonplace of present-day clinical biochemistry that a raised blood-urea can be considered as unequivocal evidence of organic kidney disease only after care has been taken to exclude various so-called extrarenal causes of azotæmia. The list of diseases in which extrarenal uræmia may be found is a long and growing one; it includes diabetic coma, pneumonia, gastro-enteritis, Weil's disease, acute yellow atrophy of the liver, Addison's disease and hæmatemesis. In the excitement of discovering more and more diseases in which the blood-urea was high and soaring, while the kidneys in fatal cases were no more than cloudily swollen, or perhaps even fattily degenerated, the question of the actual causes of the raised blood-urea was often either tacitly set aside or decently avoided by the use of imported catch-phrases such as *azotémie par manque de sel*, or *Produktionsurämie*. The published work is full of wise (but unproven) saws, and modern (but repetitive) instances. The early stages when it was profitable to amass data on large numbers of patients have passed and the future seems to lie with detailed investigations on selected cases—a type of research for which the work of McCANCE and WIDDOWSON [1] on diabetic coma may serve as a model.

In harvesting the biochemical lore of extrarenal azotæmia, many workers have applied themselves to hæmatemesis, perhaps because of its frequency, or because of the interest stimulated by MEULENGRACHT'S claims for the advantages of liberal feeding. As a result, although the raised blood-urea in hæmatemesis was first described by SÁNGUINETTI [2] in 1933, sufficient material has accumulated in the past decade to justify review. BLACK [3] has described the clinical and biochemical characteristics of this type of azotæmia. The special feature which separates it from other types of azotæmia is the presence of a large amount of blood in the bowel; that this is an important source of urea has been shown by SCHIFF and others [4] in normal people, and by BLACK and LEESE [5] in patients with gastro-duodenal hæmorrhage. In addition to an increased absorption of nitrogen from the bowel there is the possibility of an increased katabolism of the tissue protein. Direct evidence of this is hard to obtain, for the blood in the bowel, acting as an indefinitely large source of urea, precludes the classical evidence of tissue-protein breakdown which would be afforded by a negative nitrogen balance; but BLACK'S view is that there is sufficient disturbance of the internal milieu of the body by water and salt deficiency, and by circulatory impairment, to accelerate protein katabolism significantly. Over-production of urea cannot be the whole story, however, for a normal person may be given much larger amounts of urea than are likely to be formed in patients with hæmatemesis without raising his blood-urea more than a very little—in other words, a normal cardio-renal system can deal with very large increases in urea production without any azotæmia developing. Terminological custom has exonerated the kidneys in the phrase extrarenal uræmia; but the facts are ineluctable, and a profound fall in urea, inulin and diodone clearance shows that failure of kidney function is of critical importance in determining the rise of blood-urea. HOMER SMITH regards inulin clearance as a measure of glomerular filtration, and diodone clearance as measuring effective renal plasma flow; if this interpretation is valid in patients with hæmatemesis, diminished circulation to the kidneys is sufficient to account for their functional inadequacy. Other types of azotæmia may have a different basis; the question can only be answered by a wider application of balance experiments and modern renal-function tests.

The precise ætiology of a raised blood-urea in hæmatemesis is of less interest to the clinician than

1. *Lancet*, July 18, p. 72.

1. McCance, R. A. and Widdowson, E. M. *J. Physiol.* 1939, **95**, 36.
2. Sanguinetti, L. V. *Arch. argent. Enferm. Apar. digest.* 1933, **9**, 68.
3. Black, D. A. K. *Quart. J. Med.* 1942, **11**, 77.
4. Schiff, L. et al. *Amer. J. digest. Dis.* 1939, **6**, 597.
5. Black, D. A. K. and Leese, A. *Quart. J. Med.* 1940, **9**, 129.

its value in prognosis and treatment. Most of those who have studied the subject agree with WITTS [6] that the height of the rise is closely correlated with the severity of the hæmorrhage, and that a blood-urea of more than 100 mg. per 100 c.cm. constitutes one of the indications for slow drip blood-transfusion. BLACK outlines the considerations which govern the amount of blood to be given; a litre of citrated blood, given by slow drip, is often a suitable amount, but much larger quantities may be required in severe or repeated hæmorrhage. In maintaining fluid balance there is much to support the free fluid intake which is probably the chief advantage of the Meulengracht diet, but most physicians will follow HURST [7] in shunning its major eccentricities, such as broiled chops, timbale and tapioca pudding.

Annotations

ENEMY ACTION AND MORTALITY

Prof. M. Greenwood, lecturing at the London School of Hygiene on July 16, contrasted the civilian mortality (necessarily among females only) which could be regarded as an excess above the normal peace-time level in the first two years of the last war and the corresponding period of the present one. In 1915–16 direct enemy action against civilians was not, of course, of material importance, and the number of deaths from violence differed negligibly from the 1914 figures. One indirect effect of enemy action was the death of 1200 females from cerebrospinal fever—a relatively great increase from the 350 expected at the rates of 1914; absolutely, however, this was an unimportant cause of death. The main excess of 1915–16 was in tuberculosis which with 24,000 deaths in each year produced an excess of about 3000 deaths or about 7% above the peace-time level. He thought it not far from the truth to say that in those years the war-time tax on female life was paid in tuberculosis. In the last two years things have run a comparable course, except that direct enemy action has played a much larger part. The indirect effects of total war on health, however (in so far as they can be measured by mortality), may have been rather less serious than those experienced by the previous generation. In 1937–39 deaths of females from cerebrospinal fever were less than 300 per annum; in 1940 and 1941 they were roughly 1000 each year. The disease was much more prevalent in the civilian population in 1940–41 than in 1915–16 but chemotherapy had reduced its killing power. It still remains absolutely a not very important cause of death and its epidemiological history suggests no reason why it should take a major position. The least reassuring feature of today is again, in Professor Greenwood's view, the debit account of tuberculosis. The annual deaths from 1937 to 1941 have run 12,283, 11,052, 10,692, 11,843, 12,032. The actual toll has not been spectacular but there is clearly a testing here of our defences against an ancient and powerful enemy. In the first year of the war young adults suffered most, in the second year children. Again the increases at these ages can be measured in terms of a few hundred deaths, but if the war, as we are assured, must be long, those few hundreds are enough to give rise to some uneasiness. Lastly we have direct enemy action, so far the largest debit item. Methods hardly available in 1915–16 killed some 20,000 females in 1940–41, an addition of 4–5% to the death-rate of the prewar years. Perhaps that is not very much in relation to the weight of the enemy's attack, perhaps bombing may be an expensive way of killing or frightening people. That indeed may be partly the basis of Prof. A. V. Hill's beliefs, which Professor Greenwood quoted, that "the idea of bombing a well-defended enemy into submission or seriously affecting his morale, or even doing substantial damage to him is an illusion." Arithmetic must, of course, be the only accurate way of assessing the effects of bombing. But one would wish to *see* the arithmetic before deciding what it demonstrates.

6. Witts, L. J. *Brit. med. J.* 1937, i, 847.
7. Hurst, A. F. *Lancet*, June 20, 1942, p. 750.

FOOD WITHOUT WATER

IN peace-time, according to an estimate quoted by Sir Edward Appleton at the meeting at BMA House reported on another page, we import 3,000,000 tons of water a year in our foodstuffs. Some of this waste of shipping-space is already being saved by the increasing use of dried foods—most of us have lately drawn our ration of American dried eggs, for example—but when the new knowledge on drying is fully applied we may see all the food we need coming in without its water. On vegetables, fruit and such the saving is enormous, but drying will reduce the bulk and weight of an average complete diet by about three-quarters. Apart from saving on transport, drying makes it possible to keep foods without refrigeration, so that gluts, whether seasonal or fortuitous, can be made to supply us in periods of shortage. Dried milk, eggs, fruit and salted fish have for a long time been regular articles of commerce, and a large amount of vegetables were dried in the last war, though most of their antiscorbutic value was lost in the process. Dried meat, too, in the form of pemmican and biltong, has long been familiar in places where the butcher never calls. But up to the present the quality of dried meat, fish, eggs and vegetables has not been good enough for them to take the place of the fresh articles for general consumption, and little has been known about the factors influencing their palatability, keeping quality and nutritive value. When this war began the Food Investigation Board of the Department of Scientific and Industrial Research, under the chairmanship of Sir Joseph Barcroft, turned its attention to these problems, among others, and they have largely been solved, thanks to the organisation of Mr. Eric Barnard, Director of Food Investigation, the technical researches carried out at the Low Temperature Research Station under Dr. Franklin Kidd and at Torry Research Station, and the work of Dr. Leslie Harris and his colleagues at the Dunn Nutritional Laboratory to ensure the dietetic soundness of the new foods. The dehydrated foods now being produced are more compact and convenient to use, particularly under service conditions, and their nutritional stability may be even greater than that of fresh foods, for the dehydrating process removes vitamin-inactivating oxidases. In flavour, appearance and nutritional value, when they are reconstituted and cooked, they will not be inferior to the cooked fresh foods—a triumph for scientific coöperation between the food technologists, official and commercial, and the nutritional research workers.

MICROCRYSTALS OF SULPHATHIAZOLE

IN the local chemotherapy of wounds and burns sulphanilamide has been the drug most used, on account of its solubility and ready availability. Sulphathiazole has the advantage of activity against a wider range of bacteria, but the disadvantage of slow solution and absorption, so that if excess is applied it may subsequently interfere with wound healing as a foreign body. Chambers and his colleagues [1] of Philadelphia describe the preparation of "microcrystals" of sulphathiazole by the neutralisation of a solution of the sodium salt at a low temperature, the reacting mixture being kept in violent agitation by sound vibration or some other high-speed mixing device. No details of this process are given. A 20% suspension has the consistency of thick cream, and shows little tendency to settle out. The drug was more

1 Chambers, L. A., Harris, T. N., Schumann, F. and Ferguson, L. K. *J. Amer. med. Ass.* 1942, **119**, 334.

rapidly absorbed from such a suspension introduced into rabbits intraperitoneally or intramuscularly than from a similar suspension prepared from the usual crystalline form of the drug. The microcrystals have been employed in fresh wounds, skin infections, burns and abdominal operations with gratifying results in a small series of cases, both as a powder for dusting superficial wounds and as a 10% or 20% suspension, which may be injected through 26-gauge needles. Chambers and his colleagues emphasise, as do Colebrook and Francis [2] for sulphanilamide, that the drug should not be dumped on the wound but dusted on the surface in a thin layer. In one case, in spite of a large burned area, the blood sulphathiazole was never more than a trace. This is very different from the experience of Hooker and Lam,[3] who record cases where the local application of sulphanilamide powder to burns resulted in high blood levels, in one case 33 mg. per 100 c.cm., with unpleasant side effects. The powder and suspension were not sterilised, presumably because the application of moist heat would cause reversion to the macrocrystal, as happens with sulphanilamide powder, but no infections were attributed to its use. The recent case of tetanus following the insertion into the peritoneal cavity of unsterilised sulphapyridine powder [4] has drawn attention to this possibility. Microcrystals prepared by the addition of acid to the strongly alkaline sodium salt solution would not seem to be a likely source of serious infection, if reasonable precautions against contamination are taken during and after its preparation.

AN ŒSTROGEN WITH A LONG ACTION BY MOUTH

In searching for an œstrogen with a long-lasting effect when given by mouth, Robson and Schönberg [5] have examined a large number of substances, including derivatives of triphenylethylene. They point out that the discovery of the synthetic œstrogens placed at our disposal compounds with the great advantage of being highly active when given by mouth, and that while among these stilbœstrol has been most widely used and has proved of the greatest value, it has only a short period of action so that it may have to be given at short intervals to produce a sustained effect. The whole subject of the relative clinical effectiveness of œstrogens, and particularly the way in which this is influenced by the mode of administration—whether parenteral, oral, percutaneous or by implantation—has lately been reviewed by Greene.[6] Robson and Schönberg have meantime obtained one new compound, αα-di-(*p*-ethoxyphenyl)β-phenylbromoethylene (DBE), which they regard as promising, and they have compared the duration of œstrogenic action of various dosage-levels of this substance and certain other œstrogens when administered subcutaneously or by mouth. The activity was determined on groups of ovariectomised mice by a method previously described for estimating the intensity of the vaginal œstrous response,[7] the measure of duration being the period until action is halved, in days. While DBE on subcutaneous injection was found to have a relatively high threshold, further increase in dose produced a decided prolongation in its action, an effect which is likened to the behaviour of the di-esters of œstradiol. The oral threshold of DBE proved to be similar to that of œstradiol and very much higher than that of stilbœstrol, but increase of dosage resulted, for DBE, in a somewhat greater increase in the duration of action. Robson and Schönberg suggest that, after absorption from the alimentary canal, DBE is stored in the body and slowly released. They are inquiring further into this possible explanation of its long-lasting effect, and it will be interesting to know the behaviour of DBE in the type of experiment devised by Emmens [8] whereby he found that various synthetic compounds (the "pro-œstrogens" as distinct, for example, from the natural œstrogens and many compounds of the stilbœstrol series) have to be absorbed into the circulation and subsequently undergo metabolic changes to true œstrogens. It remains to be seen how exceptional is the prolongation of effect shown by DBE, and whether it is of special practical value in view of the powerful agents already available.

2. Colebrook, L. and Francis, A. E. *Lancet*, 1941, i, 271.
3. Hooker, D. H. and Lam, C. R. *Surgery, St. Louis*, 1941, **9**, 534.
4. See *Lancet*, June 27, 1942, p. 770.
5. Robson, J. M. and Schönberg, A. *Nature, Lond.* 1942, **150**, 22.
6. Greene, R. R. *Med. Clin. N. Amer.* 1941, **25**, 155; *Surg. Gynec. Obstet.* 1942, **74**, 595.
7. Robson, J. M. *Quart. J. exp. Physiol.* 1938, **28**, 195.

TUBERCLE IN THE WORKING MAN

Our tuberculosis service, worthy of respect in many ways, breaks down in some important particulars. Thus most cases with a favourable prognosis are sent to a sanatorium for 3–6 months as soon as the disease is diagnosed, and in most places treatment is given without charge to the patient, though the actual cost may amount to as much as £5 a week per bed. When the patient returns to his home, however, for convalescence and rehabilitation no such generous provison is made for him; indeed, as the Socialist Medical Association point out, in a report revised since last year,[9] the scale changes from optimum to minimum. If he has been incapacitated for more than 6 months his National Health Insurance benefit will have fallen to 10*s.* 6*d.* a week, and this with extra nourishment supplied in kind (and not as a right) by the local authority is all he has in place of his previous wage—unless he likes to apply for public assistance. He may feel it humiliating to make such application; moreover, public assistance rates vary with the district; thus in a poor area where cases may be numerous, the funds to meet them are low, and assistance is likely to be on an inadequate scale. In 1940 F. R. G. Heaf and Lloyd Rusby calculated that a tuberculous person could only just manage on 19*s.* worth of food a week if he was to be adequately fed; Prof. J. R. Marrack put the figure at 17*s.*, but even so it was well beyond the patient's means, and prices have risen since then. Nor is this the only disaster: the patient generally shares his home—probably a small and crowded home—with his wife and family. As a rule his wife probably has to go out to work to augment the family income, and the patient is thus left to take charge of the children who, lacking the protection of an ample diet, are likely candidates for infection.

The association remind us of the close correlation between war, industry, long hours of work and tuberculosis. The present war is only driving home what we learned from the last, and tuberculosis is as usual providing a barometer of social conditions. Thus the prewar steady decline in mortality has been converted into a rise: in the twelve months July, 1940, to June, 1941, about 3000 more people died of tuberculosis in England and Wales and about 600 more in Scotland than in the corresponding period in 1938–39. The reasons are evident: industrial life favours the development and spread of tuberculosis especially when the blackout interferes with ventilation; fatigue due to long hours of work, transport difficulties, and restrictions of diet add to the hazards. It is true that unemployment is no longer an important cause of defective nutrition, but for the wage-earning community as a whole, the association maintains, only about two-thirds of the increased cost of living has been met by increased income, that those who have managed to increase their purchasing power have only done so by working overtime. Hours in the factory in excess of 60 a week lead to absenteeism from sickness and to a fall in production, as the Industrial Health Research Board has demonstrated again and again; and among causes of

8. Emmens, C. W. *J. Endocrinol.* 1941, **2**, 444.
9. The War, Tuberculosis and the Workers. 2nd ed. Pp. 12. From the SMA, 33, Murray Road, Northwood, Mdx. 4*d.*

absenteeism is tuberculosis. If early cases could be removed from industry while they were still easily curable and before they had infected their fellows, the death-rate from the disease could be cut down, even in wartime. The association quote the findings of Dr. Laszlo Banszky in a factory near London between 1936 and 1941. Routine X-ray examination of 10,000 new entrants revealed active tuberculosis in 1–1·5%. Among those actually employed the incidence fell rapidly after the scheme based on these findings had been in action for a few years. Indeed miniature radiography offers the perfect method of detecting, among those entering industry, the early case for whom industrial work will mean danger to himself and others. Unfortunately organised industrial workers are opposed to its routine use—nor is it difficult to see why: a diagnosis of tuberculous disease means, for the worker, social and economic disaster. If his financial position was safeguarded and his restoration to health and to suitable work systematically undertaken, the worker would welcome early treatment as much as anyone else. As things are he naturally conceals his disability as long as his strength allows.

The association suggest that tuberculosis should be placed in a special category under National Health Insurance and that a cash allowance should be made, sufficient to provide the relatively high standard of living the tuberculous patient and his family need. They propose that notification should entitle the patient to receive full NHI benefit for a year. At the end of that time his case and that of his family contacts would be reviewed by the tuberculous officer perhaps in consultation with another physician or with a local board. He might already be back at work; if not, his capacity for light work would be considered by the tuberculosis officer and the Ministry of Labour representative, and further financial benefit would be granted according to his state. Where domiciliary treatment has been given by a general practitioner presumably he would be included in this consultation. Disabled patients might at this stage become eligible for a permanent rate of benefit either comparable with that received by tuberculous men discharged from the Forces or equal to their former wage. No doubt such a scheme would need careful planning; but the need for some provision of the kind is driven home by the main argument of the pamphlet: that the period of impoverishment at present inevitable between discharge from sanatorium and return to work is blocking the way of early discovery and treatment of tuberculosis in industrial workers.

TISSUE EXTRACTS AND WOUND HEALING

WORKERS in Jerusalem [1] have lately demonstrated the stimulation of epithelial-cell multiplication in vitro by means of heterologous adult tissue extracts, and they promise a paper shortly on the results of clinical trials of such extracts on wound healing. In assessing clinical value it is to be hoped that they will bear in mind the difficulty of comparing things that are not comparable—namely, wounds different in situation and nature in different individuals and caused by different agents. Experiments on animals such as those of Dann, Glucksmann and Tansley [2] would perhaps give more valuable results. On theoretical grounds there is no reason to suppose that an agent which promotes cell proliferation in vitro will also promote wound healing in vivo. Here again is a comparison of things that are not comparable. In the case of cell multiplication in vitro a change in rate or number of cell divisions is being observed; more mitotic or amitotic divisions occur in response to the addition to the culture of one substance than to another. In the case of wound healing it was shown as long ago as 1898 by Loeb [3] that epithelial healing occurs by sliding of cells from the edge of the wound over the bare surface; the mitotic activity is in the back areas at some distance from the bare surface. Thus what is being observed is a rate of sliding. This probably depends as much on the nature of the base of the ulcer, the looseness of the surrounding epithelial connexions and capacity to be stretched as on distant mitotic activity. Loeb's observations have been amply confirmed in the years between and the whole subject reviewed by Arey [4] in 1936. Since then Wigglesworth [5] has demonstrated the same phenomenon, with great ingenuity, in insects and has suggested that the immediate stimulus for the cell division which occurs at a distance from the wound is a cell scarcity resulting from the slide. A macroscopically visible demonstration that a slide does in fact take place is provided in corneal healing in those animals and races in which pigment is present in the corneoscleral junction.[6] After a lesion of corneal epithelium which is extensive or approaches the junction without actually touching it the pigment line breaks and two pigmented limbs move gradually down or across the injured surface of the cornea. As they progress from day to day the surface ceases to be stainable with fluorescein, an indication familiar to ophthalmologists that healing has taken place. If sections are made of the recently covered area, pigmented cells and some mucous glands derived from the conjunctiva will be found in the new covering of epithelium. In a simple corneal ulcer healing is very rapid. Bacterial infection and œdema from any cause delay it.

TRYPTOPHANE DEFICIENCY

TRYPTOPHANE was isolated by Hopkins and Cole [7] in 1901, and soon after that it was recognised to be in all probability an essential amino-acid. As such, a specific syndrome might have been anticipated from its deficiency, but this was not described for some time owing to the difficulty of providing diets which were deficient in tryptophane but perfect in all other respects. Albanese and Buschke [8] have now shown that young rats which have been nourished on a diet poor in tryptophane develop cataracts, vascularisation of the cornea, alopecia, defects in the enamel of the incisor teeth, and (if male) atrophy of the testis and aspermiogenesis. Adult animals do not develop the cataracts or the defects in the incisor teeth. It is apparent that continuously growing epithelial structures bear the brunt of this deficiency, but in the opinion of these two observers the lesions are not confined to those tissues, for there is also a retardation of growth and a loss of skin turgor. The similarity of the ocular changes to those produced by a riboflavin deficiency is interesting. An editorial article in the same number of *Science* suggests that since cereal proteins contain considerably less tryptophane than animal proteins it is dangerous to rely solely on cereals as the source of amino-acids in human diets—as might be done in a postwar world faced with grave shortages of other kinds of food. This may be so, but humans have a much lower rate of metabolism than rats, and even the most unbalanced human diet is likely to contain sources of protein other than the cereals. The importance of Albanese and Buschke's findings in human nutrition has yet to be proved. If and when it is, there will be one more reason for seeing that everyone—rich and poor, native and European—gets a sufficiency of animal protein.

1. Doljanski, L., Hoffman, R. S. and Tenenbaum, E. *Nature, Lond.* 1942, **150**, 23.
2. Dann, L., Glucksmann, A. and Tansley, K. *Brit. J. exp. Path.* 1941, **22**, 70.
3. Loeb, L. *Arch. EntwMech. Org.* 1898, **6**, 297.
4. Arey, L. B. *Physiol. Rev.* 1936, **16**, 327.
5. Wigglesworth, V. B. *J. exp. Biol.* 1937, **14**, 364.
6. Mann, I. and Pullinger, B. D. *Proc. R. Soc. Med.* 1942, **35**, 229.
7. Hopkins, F. G. and Cole, S. W. *J. Physiol.* 1901, **27**, 418.
8. Albanese, A. A. and Buschke, W. *Science*, 1942, **95**, 584.

In England Now

A Running Commentary by Peripatetic Correspondents

WE seem to have settled down at last to a stoical acceptance of the hardships of war—sewing-cotton for ligatures, no eggs and bacon for breakfast, no liquid paraffin, and the ache of long-disused bicycling muscles. One overfull day follows another and the spices of life seem somehow forgotten. This year, last year, they seem so much alike. Yet every memory of the summer of 1940 seems to be cut crystal clear in my memory. As we stood on the brink of destruction during those lovely summer days every flavour that life could offer seemed infinitely sweet, for there seemed to be so sharp an edge to living. Savour each morsel to the full, roll it around the tongue and store it away in the memory, for it may be the last. Each moment seemed so much a lingering farewell to all one had loved that I swear the roses of those golden days were sweeter, the dew softer, and never did jasmine drench the moonlight as it did that night when the distance glowed red under our first air-raid. It is two years ago and yet I can recall every moment of a stolen bathe. Was it to be the very last? The barricades were going up on the beaches and the wagons were being dragged across the lanes, but the water was still silver cool and it was heaven to float half asleep on the still sea and ecstasy to lie on the hot sand. And all the way home the hay was sweet in the fields. I was back in my youth again with blood running fast. There were adventures too in those days. Coming home one night from a distant cottage hospital, just as the pubs closed and the LDV came on duty, I was stopped ten times in as many miles by a swinging red lantern. Each time, with a loaded double-barrelled shotgun thrust in my ribs, I had to fumble for my identity card. Merciful providence alone brought me safe home that night. But my most treasured memory is of a night in September of that year. I was spending a week-end on Exmoor and my room overlooked the village green. I woke to the sound of the church bell ringing. Then the night was quiet again with the quiet of the countryside asleep. Presently a steady clip-clop was heard, and into the moonlight rode the squire, an old soldier, thin and very straight on his hunter. He had his revolver with him, and he was followed by two grooms, each with a shotgun. In the rear came a handful of farm lads on Exmoor ponies and they had their bill-hooks slung from their waists. Through the faint white mist of the summer's night they rode away up on to the moor. Clip-clop, clip-clop. All was well. Saint George had gone forth to do battle with the Dragon.

* * *

A peripatetic correspondent recently wrote of the illiteracy of the medical student south of the Tweed. I entirely concur and extend what he wrote to other students. Mine are southrons and almost completely illiterate and I maintain that this illiteracy has developed since 1918. What have the public and secondary schools been up to all this time? The annoying thing is that I have to pass the large majority because, under the smoke-screen of words they raise against my scouting, I think I discern a knowledge of 40% of the facts of physiology. It is a grief to me that such people should be let loose on an unsuspecting public as people of education. They often write sheer nonsense which a moment's thought would have shown to be such. The vagus—a nerve they well know to be mainly visceromotor innervates (spelt "enervates") the external intercostals, the diaphragm ("diaghram") and the muscles of the abdominal wall. The phrenic rarely, in their answers, enervates the diaghram, but shares the other imaginary functions of the vagus. This, of course, is Johnsonian "sheer ignorance, madam," but they ought not to be so ignorant so often. The sentences they write, though they pause and analyse, often add nothing to knowledge. What do you make of this? "Differences of pressures in the chambers of the heart are measured by connecting needles to smoked drums." Or of this? "The heart is attached to a fine quartz fibre suspended between two poles." Darts? Or the Rugby football goal? I guess, but there was no confirmatory evidence, that Piper's manometer and Einthoven's galvanometer respectively were intended. I have only a hunch that this was so. And the jargon they write! What exquisite examples they would have afforded to Quiller-Couch and A. P. Herbert. "Hæmoglobin takes up oxygen in large proportions." "The bundle of His is adapted to conduction." "This compound is very important in the function of the red blood corpuscles." ". . . the Purkinje fibres which ramify the majority of the ventricles." (What an odd mathematical problem to find a majority among two items.) Two adjacent students—I do not hint for a moment at collusion—wrote: "This is of great importance with regard to the function of the cell in connection with respiration" and "This becomes important in relation to the carriage of carbon dioxide by the blood." Two minds with but a single woolliness between them! Jargon, slop, woolliness and make-belief in education! And yet with this pulp of a mentality they go out into the world, and make good. That's the startling thing. But this proves nothing. Least of all that education is no good.

Are all undergraduates so illiterate or is it only those who read science who so lack "nous," precision and power of expression? Anyhow our schools and universities will have much to answer for at Doomsday.

* * *

Cedric has just come back from camping with some other little thugs at Brightsea. He has improved enormously in every way, a change which his mother vaguely attributes to those thick woollen combinations and Auntie to the ozone which as the LNER points out is unusually dense down there. A Recording Angel, however, has other views. In general his severance from home life and the alterative of new surroundings and diet have been beneficial. In particular, going down in the train he was set on by his friends and got a large bruise of the thigh. Clever people call this autohæmotherapy; it acts in the same way as trying out one's repartee at home first or sparring with a younger brother before taking on the boy down the street. He was far too busy for the first three days to open his bowels. This gave him a sour mouth, to which green apples were irresistible. His pylorus said, "Hoots, if you'd only give me food like this for two months, my lad, I'd make you a stomach an ostrich might be proud of!" It kept on saying it all night, and the lower tubes joined in the chorus. During this hymn of praise all the proud racial groups in the large intestine, who for the last ten thousand generations had never had to face anything worse than a mild cataclysm from syrup of figs, were swept away. A sturdier lot, who managed to run the acid blockade, took their place; they came from sewage-contaminated ditch-water which he drank on a very hot day, some uncooked food stolen from the store-tent and much favoured by the latrine flies, and a host of grasses, well-manured straws and bits of wood which he sucked or with which he picked his teeth. Nor was this all—in a fight with a friend Cedric bit his hand and swallowed some oxyuris eggs. His eosinophils were delighted, they hadn't had such an outing since two years ago when he hogged some bad fish which had been thoughtfully put aside for the cat. Outside the narrow world of the gut other happy events were taking place. His leucocytes were having splendid sport; they were partially mobilised all the time and dealt with sunburn, torn knees, hundreds of mosquito, gnat and horsefly bites, and of dog, boy and wasp bites one each. The neglected aliens disposal board, so important to his forefathers, also worked day and night; nettle stings, cockles, berries, a legion of moulds and pollens, and the excretions and emanations from his little friends were among its chief clients. Nor must we forget his fibroblasts, who, owing to many surface abrasions were able permanently to retire their older members, thus making room for new blood. Many muscles were fully used for the first time—e.g., the abductor hallucis—or put to a new use like the masseters in defæcation. Mentally he became much more alert. This was partly due to the great depth of his sleep, the result of his getting plenty of CO_2 under his blankets and those excellent hypnotics, the effluvia from the axillary and inguinal region, and partly to his realising that he was now in an unprotected state, and that pain, hunger and/or indignity followed any failure of defence precautions. Psychically also he improved. In "helping" a farmer thresh he killed and maimed a number of rats, thus proving his superiority over another mammal,

and this sadistic orgy had a most tonic effect on his ego (neé id). Spiritually—if one can use this word with such as Cedric—perhaps he was born, for in that for the first time he saw the dawn (from the latrine during the apple deluge), in that he felt the immensity of the sea (and swallowed several pints of it), and in that he smelt the mists from lowland leas at dusk, which he compared unfavourably with those from a friedfish shop, it may be hoped that he glimpsed the face of his Creator.

* * *

I had a partner once who vowed that he would write, before he died, a book with the title "Anatomy and Toxicology for Would-be Suicides and Murderers." The determination came at the end of a long operation we had done together on a girl with a severe self-inflicted abdominal wound. Actually she was more unlucky than ignorant, for in talking with her doctor an hour or two before she had made some remark and added, "With my hand on my heart, I swear it is true," and she put her hand on her left breast as she said it. The doctor, who never dreamt of the outcome of his joke, teased her with, "Don't be silly, your heart isn't there it's here," folding his hands on his prominent paunch. Then only a few days ago I saw a woman who had wandered into her bathroom in search of a draught to end all trouble. She first came on a bottle of carron oil and hopefully swallowed the lot. Finding that she felt if anything a little better for this drink she went to look for something more potent and this time put away the best part of a bottle of lysol. So well protected with oil were her mouth, œsophagus and stomach that she came to little harm apart from having to submit to the indignity of the stomach pump. When I told this to my late partner he said that he now planned an appendix of anatomy for abortionists, having recently removed a vast and jagged piece of slippery-elm bark from the bladder of a woman who had thrust it hopefully into the wrong orifice.

* * *

I have had enough experience of parents' matches at preparatory schools to know that they seldom, if ever, go according to plan. The theory is, of course, that the parents, by the exercise of their superior skill and cunning, so contrive matters that the boys win, by one run or thereabouts, in the last over of the day. You can take it from me that it never works. If the parents bat first they are all fiddled out for an absurdly small total and lose by 10 wickets. If they field first they start by tempering the wind to the shorn lamb—bowling long hops to leg and artistically dropping simple catches—only to find that the opening pair of little brutes, having thoroughly played themselves in, can't be separated; with the result that the boys declare with 250 for 3 on the board and the parents as usual rabbit out for about 50. The prospect of playing for the parents at a large school for large girls was even more alarming. I have now reached an age when I no longer look forward to standing up to swift bowling from a lot of beefy girls—and how beefy they are these days, to be sure! However, there was no wriggling out of it and as the father of a small and new big girl I felt that much depended on me. The parents batted first and when I went in—even more nervous than usual in such circumstances—we had lost 5 wickets for a matter of 20 runs. As if they hadn't enough to cope with male parents were issued with pieces of wood, sawn off, narrow and unspliced at that, to serve as bats. By watching the ball with extreme care I survived a shaky over or two and began to get the measure of things. I was ably partnered by an absurdly young-looking father. We took the score to 80 and were still together at the tea interval when, to my relief, we were forcibly retired. Thanks to some brisk hitting by a couple of athletic mothers the parents' total topped the hundred and when stumps were drawn we had got half the young ladies out for 60 so it was a pretty even game. I was told afterwards by my small daughter that my performance had given satisfaction and that I had even been described as a classy bat; that ought to do her a bit of good. Appropriately enough I bowled a couple of maidens.

* * *

For Positive Health we always preach
And Positive Health we sometimes teach,
But Positive Health we never reach;
It's cranky and slightly boring.

Parliament

ON THE FLOOR OF THE HOUSE

MEDICUS M.P.

THE last days of the session before the recess have been crowded with business and with meetings in committee rooms at which distinguished people have come to give Parliament information on matters of grave public concern. M. Maisky, the Soviet ambassador, addressed members on the military situation in Russia, a Frenchman, lately escaped from Lyons, spoke with great eloquence and persuasive conviction on the present situation in France, and Mr. Nash, New Zealand Minister at Washington, described the situation in the Pacific. No member has any excuse for not realising that we are in truth in the midst of a world war. And the adieux some of us have made to Sir Arthur Salter, parliamentary secretary to the Ministry of War Transport, on his return to his office in Washington, have underlined this world-war aspect. The air-linked framework of the post-war world is already beginning to appear in the air-linked civilian and military staffs of the United Nations who move from continent to continent as quickly as four years ago we moved from London to Paris. All problems, and not least all medical problems, must be looked at in the light of this revolution in transport and communications, and, complementarily, in the pooling of our personnel under lease-lend arrangements.

The colonies are now part of our back-garden and when Dr. H. B. Morgan in a Colonial Office debate criticises administration there—"neglected food-supplies, extensive diseases, poor medical services, destitution, poor wages, people divorced from the land, high illegitimacy rates, juvenile delinquency, minimum welfare, poor educational standards and facilities"—he is criticising things which will affect us tomorrow as closely as the slums of London and Glasgow affected us yesterday. It is indeed significant that we have had two Colonial debates in such quick succession. The disasters of Malaya and Singapore and Burma have made us colony-conscious. Dr. Morgan advocated, among other things, a federated medical service for the West Indies open to both European and West Indies on equal terms. There is no more urgently needed reform in all the Colonies. No real progress can be made until health conditions there approximate to those in Western Europe.

Mr. H. Macmillan, Under-Secretary of State for the Colonies, said in his reply that in terms of services—medical services and so on—standards have risen in the colonies during the war. But in the West Indies the submarine menace in the Caribbean is preventing this and in Rhodesia and Nigeria there is the complication of the introduction of forced labour especially for tin mining. What the effect of this on health conditions will be is not easy to forecast. But unless the arrangements for huts, sanitation, water and food are a great improvement on the conditions at prewar mines the results may be deplorable. But the Colonial Secretary had said that he did not like forced labour and would get away from it as soon as possible. What the conditions become will depend on the duration of the war.

* * *

Other business has been the passing of the United States of America (Visiting Forces) Bill which takes American soldiers out of the jurisdiction of British courts to their own court-martials and which may provide some difficult situations with regard to medical evidence. We have also had a debate on conditions in Ordnance Factories and a vindication of their efficiency by Sir Andrew Duncan.

* * *

On the last day of the session Mr. I. C. Hannah arose on the Conservative benches, duly called by the Speaker, and at the top of his voice cried aloud "Who can count the dust of Jacob," which somehow reduced the whole house, a crowded house, to helpless laughter, front benches and back benches going down like rows of cards. This was the introduction to an historical disquisition on the contacts of Judæa and Mahomet, on ancient history and modern, and incidentally, on the possibility of recruiting a Jewish and Arab Army in Palestine. It

was a great oratorical feat for it kept the attention of the house—a delightedly laughing attention—and there are not too many amusing speeches in the House these days. And so, after a statement on prisoners of war by Sir J. Grigg and a discussion on the transfer of women munition-workers from one part of the country to another, away to a recess which members think too long because they fear it may be curtailed by a grave crisis in the war.

QUESTION TIME

Pensions for Cripples

Mr. B. V. KIRBY asked the Paymaster General whether, in framing the Government's post-war reconstruction programme, he would consider the desirability of introducing state pensions for all persons permanently crippled, thus relieving them of the pain and anxiety of competing in the labour market with those more physically fitted for the life of industry and commerce.—Sir WILLIAM JOWITT replied: This matter falls within the scope of the committee on social insurance and allied services presided over by Sir William Beveridge. I understand that the committee have received evidence from organisations and persons concerned with the welfare of cripples and that the question is likely to be dealt with in the report.

Tuberculosis in Wales

Mr. JAMES GRIFFITHS asked the Minister of Health what steps had been taken to deal with the waiting-list of patients for admission to tuberculosis hospitals and sanatoria in Wales.—Mr. E. BROWN replied: I have under immediate consideration the possibility of releasing from the Emergency Hospital Scheme a further 200 beds for tuberculosis cases in Wales.

Pension Cases Referred to Specialists

Mr. JAMES BARR asked the Minister of Pensions how many pension cases had been submitted to the panel of independent medical specialists since the declaration of war; and with what result.—Sir W. WOMERSLEY replied: 127 cases have been so referred, of which 46 were recommended for admission to pension.

Admission of Women to London Medical Schools

Prof. A. V. HILL asked the Minister of Labour whether he was aware that most medical schools in London refused to accept women medical students, although many with good educational qualifications were anxious to enter; and whether, in view of the fact that students beginning now would not be medically qualified for several years, he would refuse to reserve any more men to commence the study of medicine in these schools unless they agreed to take a reasonable proportion of suitable women.—Mr. ERNEST BEVIN replied: I am aware that some medical schools in London do not accept women students. Whether such schools should accept them is a question for consideration by the committee on medical schools. I must, however, take all relevant facts into consideration before I agree to reservation.

Reservation of Dental Students

Prof. HILL asked the Minister whether he was aware that a number of foreign refugee dentists were at present unemployed; and whether, in view of the shorta[illegible] of man-power, he would cease to reserve further dental students from military service until these refugee dentists were absorbed, either in practice with temporary registration, or as students to obtain British qualifications.—Mr. BEVIN referred to the reply given by the Minister of Health on July 14, and added that the suggested reduction in the quota of British dental students would not be practicable since quotas of dental students are fixed with a view to maintaining the future supply of British dentists, and it would not be proper to reduce them to make room for students who may not in the ordinary course be practising in this country after the war.

Shortage of Midwives

Mr. G. C. HUTCHINSON asked the Minister of Health whether he was aware that it is the policy of the Central Midwives Board to require pupil midwives during the second period of their training to reside in the homes of district teacher midwives and to permit a limited number of pupils only to reside during this part of their training in an institution; that, as a result, only four pupil midwives could now be trained in the maternity service maintained by the Ilford borough council; and whether, in view of the need for training a sufficient number of midwives and the difficulty of arranging for pupils to reside with district teachers, especially under war-time conditions, he would take steps to secure some modification of the present policy.—Mr. BROWN replied: I am aware that the policy of the CMB is to require pupil midwives to live with their district teacher during a part of their second period of training, so that they may receive the full value of the domiciliary training. The shortage of practising midwives is not due to a shortage of pupils, but to the failure of many qualified midwives to practise. I do not, therefore, think it is necessary to ask the board to modify their policy.

Mr. HUTCHINSON: Is the Minister aware that the Ilford borough council would be able to train a very much greater number of pupil midwives if they were permitted to reside in the institution instead of with the district teachers?—No further reply was given.—Professor HILL: Does the Minister consider it a good thing to allow young men to stay out of the Services merely to prevent women entering the medical profession?—Mr. BEVIN: I do not deal with reservations on that basis. No-one regrets more than I do the rigidity of the medical trade-union rules.

Diabetes as Cause of Death

Replying to a question Mr. E. BROWN said: Before 1940 the statistical classification of deaths in respect of certificates attributing the cause to diabetes in conjunction with one or more other diseases was decided by means of rules giving the precedence of one disease over another as laid down in the Registrar-General's manuals of the International List. These rules gave a high precedence to diabetes over other diseases. From 1940 classification has been carried out in accordance with the order of statement of the various causes on the certificate by the certifying medical practitioner, with certain exceptions laid down in the manual issued in 1940. Since diabetes is frequently certified as merely a contributory cause of death, in association with another disease considered by the certifier as more important, the effect has been to reduce the number of deaths classified to diabetes in the statistics of cause of death, and the corrective factor to be applied to numbers of deaths in years prior to 1940 is 0·69. In the recent quarterly returns of the Registrar-General the necessary correction has been applied to the diabetes deaths there shown for years 1938 and 1939.

Infectious Disease in England and Wales

WEEK ENDED AUG. 1

Notifications.—The following cases of infectious disease were notified during the week: smallpox, 0*; scarlet fever, 1456; whooping-cough, 1116; diphtheria, 650; paratyphoid, 6; typhoid, 9; measles (excluding rubella), 6476; pneumonia (primary or influenzal), 418; puerperal pyrexia, 160; cerebrospinal fever, 69; poliomyelitis, 9; polio-encephalitis, 4; encephalitis lethargica, 1; dysentery, 64; ophthalmia neonatorum, 81. No case of cholera, plague or typhus fever was notified during the week.

The number of civilian and service sick in the Infectious Hospitals of the London County Council on July 29 was 1561, including scarlet fever, 255; diphtheria, 146; measles, 375; whooping-cough, 238; enteritis, 65; chicken-pox, 87; erysipelas, 38; mumps, 60; poliomyelitis, 2; dysentery, 35; cerebrospinal fever, 14; puerperal sepsis, 18; enteric fever, 4; german measles, 2; other diseases (non-infectious), 118; not yet diagnosed, 104.

Deaths.—In 126 great towns there were no deaths from scarlet fever or enteric fever, 3 (1) from measles, 4 (2) from whooping-cough, 12 (0) from diphtheria, 42 (11) from diarrhœa and enteritis under two years, and 6 (0) from influenza. The figures in parentheses are those for London itself.

Birmingham reported 5 deaths from diarrhœa, Ipswich 4.

The number of stillbirths notified during the week was 234 (corresponding to a rate of 35 per thousand total births), including 34 in London.

* In the week ended July 25, 2 cases of smallpox were notified, 1 in Westminster and 1 at Stone, Staffordshire.

MEDICAL SICKNESS, ANNUITY AND LIFE ASSURANCE SOCIETY.—At the annual meeting of this society, held on July 27, Mr. R. J. McNeil Love, chairman of the board of directors, who presided, said the amount of new life assurance business was only slightly smaller, but the claims by death had been lighter and the surrenders fewer. On the sickness fund the claims had been considerably lighter and the premiums were up a little. The funds of the society had been increased by £173,537, and now stood at £2,355,319. The quinquennial valuation at the end of last year had disclosed a surplus of nearly £83,000 on the life assurance and annuity fund and of £120,850 on the sickness fund.

SCOTLAND

PREVENTIVE MEDICINE ON CLYDESIDE

SOME months ago an important experiment in preventive medicine was begun in the Clyde basin, where nearly half the insured population of Scotland is huddled, and where sickness-rates before the war were high. General practitioners in this area were asked to refer to the EMS regional officer young people of 15–25 among their patients who were engaged on war work and seemed likely to benefit from further investigation or treatment. In his Honyman Gillespie lecture in Edinburgh on July 30, Dr. Andrew Davidson, chief medical officer for the Department of Health, described how the scheme had worked in practice. Just under 700 patients have been dealt with and about half of these have been admitted to EMS hospitals or convalescent homes. Most of them were young debilitated workers, complaining of fatigue, vague aches and loss of appetite, in whom little gross organic disease was found, but some had anæmia, bad teeth or unhealthy tonsils to account for their symptoms, others were convalescing from influenza, pleurisy or pneumonia, and a few were contacts in whom the tuberculosis officer had found no signs of disease. The next biggest group of patients included those suffering from anxiety states and those with repeated attacks of minor respiratory illnesses whose convalescence had been prolonged. Most of these patients had a history of long hours of work, uncongenial work, changing shifts, excessive travelling, unsatisfactory diet—this in spite of local canteens—too much smoking and so forth. On the whole late hours and ill-spent leisure were not common. Many only needed a rest, change of scene and good food to restore them and they were sent directly to convalescent hospitals. But when the ordinary overhaul left any doubt about the possibility of more serious disease they were first sent to hospital for a thorough examination. Reports from discharged patients leave no doubt of the good the scheme has done, but the after-care of these young patients is equally important and it is hoped as the experiment develops, with the help of the Ministry of Labour, to arrange from time to time to review the work of these people in relation to their physical condition.

EDINBURGH SCHOOL HEALTH SERVICES

Last month the Edinburgh education committee approved a reorganisation of their medical and dental services which cannot, however, be put into operation until after the war. The new service will cost £32,000, or nearly double as much as the old one. Special stress is to be laid on the care of the children's teeth, and there will be ten dental officers instead of seven. The scheme will also include part-time oculists and aurists.

GEORGE KEPPIE PATERSON

Dr. G. Keppie Paterson, who died last month at the age of 81, was elected to the fellowship of the Royal College of Physicians of Edinburgh in 1895 and was one of its senior fellows. After graduating with honours from the University of Edinburgh in 1882 he was for over ten years assistant to Sir Alexander, then Professor, Simpson. Dr. Paterson was an enthusiastic worker for the Edinburgh Medical Missionary Society and for more than half a century was associated with the Livingstone Dispensary in the Cowgate, of which he was convenor and consulting obstetrician. Travelling and music were his hobbies and for many years in the midst of a busy general practice he found time to run a choir at the dispensary.

WELFARE OF SCOTTISH MINERS

The Secretary of State for Scotland has appointed a committee under the chairmanship of Sir David King Murray to report what measures should be taken to enable the fullest use to be made of existing and potential resources in the Scottish coalfields and what provision of houses and other services will be required for the welfare of the mining community. Eight of the committee's twelve members are representatives of owners and workers. The other four are the county clerk of Stirling; Mr. F. C. Mears, FRIBA, planning consultant for East Lothian, Midlothian, Fife and Greenock; Mr. Thomas Brown, consulting mining engineer of Glasgow; and Mr. A. S. McKinlay, MP, deputy chairman of Glasgow corporation. It is to be regretted that there is no medical member.

MEDICINE AND THE LAW

Advertised Cures for Diabetes

FURTHER prosecutions during July gave fresh publicity to the fact that, under section 8 of the Pharmacy and Medicine Act, 1941, it is now an offence to advertise any article in terms calculated to lead to the use of the article for the purpose of treating diabetes, tuberculosis, epilepsy and other specified diseases.

In a case at Bristol, where a defendant was fined £5 on the prosecution of the Pharmaceutical Society, it was said that he had formerly advertised in a magazine called the *Herb Doctor* a patent medicine called 'Daddy's Deodorised Viscous Oil' for treating diabetes. This advertisement had appeared long before the act was passed. Recently one of the society's inspectors had written to ask the defendant for particulars of this cure. In his reply the defendant said that he was no longer permitted to describe the medicine as a remedy for diabetes. He seems, however, to have enclosed a printed circular stating that it was a cure for diabetes. Section 8 (2) of the act declares it to be a good defence to prove that the advertisement was published only so far as was reasonably necessary to bring it to the notice of persons of certain named classes, including members of Parliament, hospital committees, registered medical practitioners, registered nurses and registered pharmacists. Section 10 (2) says it shall be a good defence to prove that the advertisement was published only in a publication of a technical character intended for circulation mainly among persons of certain named classes, including registered medical practitioners, registered nurses and registered pharmacists. Section 15 places on the Pharmaceutical Society a statutory duty to enforce section 8 and to employ its inspectors for that purpose. The Bristol defendant's legal representative took the ingenious point that, as the prosecuting inspector was a registered pharmacist, there was a good defence. When this contention failed, he complained that his client had been trapped by the society in a not very worthy manner.

In another case, heard at Dolgelley, a Caernarvon company, T. S. Ingham, Ltd., was summoned for advertising a product by means of a booklet entitled "The Conquest of Diabetes." Here the prosecution seems to have been undertaken under the act by the local food and drugs authority. A Merioneth weights and measures inspector said that his assistant bought a bus ticket on which was an invitation to write for a free copy of this booklet. He did so, and after sending money received a bottle of tablets. The booklet described the discovery of a herb in South Africa and its cultivation and preparation as an effective treatment for diabetes. The weights and measures inspector disclaimed making any accusation against the merits of the tablets—a fact which the defendant's solicitor emphasised. "You don't mean to say," asked Dr. John Jones, the presiding magistrate, "that this is a remedy for diabetes, do you?" "I am instructed that it is," replied the solicitor; "if you read this booklet, I think you will find it is an adequate remedy for diabetes." The solicitor explained that the advertisement on the bus tickets was arranged for in 1938, but evidently the old stocks were not yet exhausted. The Caernarvon company had asked the omnibus company to discontinue the use of these tickets, but the Government restrictions on paper made this impossible. The booklets were kept in stock for the foreign and colonial trade where, said the solicitor, their use was legal. The defendant company was short of staff, owing to the war, and Mr. T. H. Ingham, one of the two directors and also the secretary of the Caernarvon company, was unable to give his full attention to details as he was a sergeant in the Caernavon special constabulary. The magistrates imposed a fine of £5, including costs.

It may be added that the act requires the consent of the Attorney General to be obtained before proceedings are instituted under section 8. This requirement presumably ensures that frivolous and unnecessary prosecutions are not undertaken.

Letters to the Editor

DIPHTHERIA IN INOCULATED PERSONS

SIR,—The paper by Dr. Glover and Professor Wright in your issue of Aug. 1 brings again into prominence the question of the value of the subsequent Schick test after immunisation against diphtheria. Bousfield and others have shown that the subsequent Schick test indicates a percentage of failures in immunisation which varies with the type of prophylactic used and the technique and dosage adopted, and it appears that a failure-rate of 0·5% is not uncommon even with the best material and technique. The case-incidence in inoculated persons represented by the figures of Glover and Wright is approximately 0·72%, a figure sufficiently near to the foregoing, allowing for the variation in material used, to be accounted for by a normal failure-rate. The case-fatality rate is low enough to suggest that even in the apparent failures the immunisation may have had some modifying effect on the course of the disease and the claim that from the point of view of herd immunity the results are satisfactory is quite justifiable. So long, however, as immunisation is purely voluntary the necessity for popular education in its value is of paramount importance. The scientist will be more than satisfied with figures such as these, but those who are concerned with anti-immunisation propaganda will be able to focus public attention on the fact that 396 cases, with 11 deaths, occurred in immunised individuals during the period under review and to say to the parent "one of these children might have been yours!", a propaganda point with direct human appeal. Even to be honest with the parents who bring their children to the immunisation clinics and to say that one child in every two hundred will not obtain protection is a dangerous weakness in our case for general immunisation, since the parent is naturally more concerned with the safety of his own child than with the more academic point of the freedom of the community from epidemics.

The low incidence of the disease among children found to be subsequently Schick-negative and the infinitesimal proportion of fatal or serious cases among Schick-negatives does, however, put us in a position to say to the parent of the subsequently tested case that we can very nearly guarantee immunity from serious risk, or, if the test is positive, that immunisation having failed the danger of diphtheria should be carefully borne in mind if any symptoms develop. By carrying out the test we can eliminate the case of the parent who, lulled into a false sense of security by the knowledge that immunisation has been carried out, allows the disease to progress to a dangerous stage before calling in the doctor.

In the large city the technical work of Schick-testing is formidable, but should not be insuperably difficult. In the small town, where a single serious case in an immunised child may completely wreck an immunisation scheme by the spreading of plain or more frequently embroidered rumours, the task is easier and much more essential. In this town, for instance, although not a single case of diphtheria has yet been recorded in an immunised child, a fatal case in a neighbouring district, in a child inoculated but not subsequently tested, caused a considerable falling off in the numbers applying for immunisation. The Schick-testing of sample batches, a useful method of discovering the efficiency of a scheme as a whole, does not help to solve the problem of the individual.

One wonders, too, whether the complete abandonment of the preliminary Schick test is wise. If the incidence of the primary negatives is over 30%, the saving of time and materials resulting from a preliminary Schick is great enough to be worth the trouble, and such a high incidence of immunity is possible in certain circumstances. In this town the after-effects of a considerable epidemic of a low-grade clinical type in the winter of 1937–38 were producing, in 1940, a preliminary Schick-negative rate of this order. With the passage of time and the growing up of infants who were too young to be exposed in that epidemic, it is now found that this high negative rate only applies to children over 10 years, so that the preliminary test is used now only in the older groups, but the practice of carrying out preliminary tests on sample batches in order to obtain some index of the proportion of naturally immune children might prove worth while as a general policy in urban areas.

Accrington. JOHN D. KERSHAW.

INCIDENCE OF RHEUMATIC FEVER

SIR,—Morris and Titmuss in their valuable article of July 18 showed the power of the social factor over the mortality from rheumatic heart disease, but I think that their findings cannot simply be applied to the problem of incidence of the disease. It is one thing to show that once a patient has developed rheumatic heart disease the mortality rises steeply with poverty, but quite a different matter (pace your editorial) to show that in acquiring acute rheumatism poverty is peculiarly potent. Indeed the only figures for economic status that Morris and Titmuss could quote showed that deaths from rheumatic fever at 20 years and upwards are not related to poverty. These figures they dismissed on the ground that "rheumatic fever is important only in childhood"; and surely this statement of theirs is an exaggeration. Being interested in the problem, I have made routine inquiry into the family history of my patients for rheumatic fever, rheumatic heart disease and rheumatic chorea (which I shall call the rheumatic diseases for brevity).

(*a*) In 300 "control" patients treated for miscellaneous medical diseases, one or more cases of the rheumatic diseases occurred in 41 of their 300 families. Thus, in this district (Deptford and Greenwich) among 100 families I can expect some 14 familes to have a case of the rheumatic diseases in a member other than the one questioned.

(*b*) In 150 patients who had suffered or were suffering from the rheumatic diseases I took family histories. At least one additional case of the rheumatic diseases occurred in 48 families—i.e., an incidence of additional cases in 32 families per 100 "rheumatic" families.

What is the explanation for this excess over the controls? Possible explanations are poverty, infection or contagion, and/or familial predisposition. The 150 rheumatic families came from the same district and the same social groups as the 300 others. Yet once a case of the rheumatic diseases had occurred in a family, the incidence of *further* cases in those families was greater than the incidence of *first* cases among the controls. Infection or contagion is an unlikely explanation—it is common for acute rheumatism to arise in different members of a family at intervals of many years. I conclude that a familial predisposition is likely, but, once rheumatic heart disease is acquired, poverty is specially important in determining mortality. Emphasis on the sensitivity of the disease to social inequality may be overdue, but stress on hereditary influence is not therefore premature.

I thank Dr. W. Allen Daley, medical officer of health of the London County Council, and Dr. B. A. Young, medical superintendent, for permission to publish this letter, but I am solely responsible for the views expressed.

Greenwich. ELI DAVIS.

SUCTION DRAINAGE OF TUBERCULOUS CAVITIES

SIR,—In your annotation of Aug. 1 (p. 130) you say, "The operation improves the general condition of the patient by reducing toxæmia and reducing cough and sputum." As one who has been associated with a comparatively large number of cases treated in this way, and whose function it has been to select suitable cases and observe their subsequent progress, I have formed the opinion that in a certain proportion of cases the immediate improvement in the well-being of the patient has been quite out of keeping with the mechanical results achieved. Neither has the patient's improved general condition been essentially due in all cases to the abatement of pre-existing symptoms such as cough and sputum. I agree that where these symptoms have been prominent beforehand the patient experiences considerable relief from their modification after cavity drainage, and this relief often justifies the continuance of drainage where there is a wide-open bronchus and the cavity shows no signs of closing. But the almost immediate general improvement has often been even more striking in persons

who have not previously complained of cough and from whom sputum was unobtainable by ordinary methods. Two somewhat anomalous cases may illustrate my point. In the first the cavity was "missed" at the operation, no drainage took place, and the catheter was removed after two days. The patient appeared, however, to be better for the procedure and the large cavity rapidly diminished in size and may by now have closed completely. In the second case there were at least two large cavities in each lung. Drainage of one cavity was successfully undertaken and it is no longer seen on X ray. In spite of the presence of three equally large untreated cavities elsewhere, the patient, who is a good witness, is emphatic as to the immediate improvement in his well-being which followed the operation. I am not prepared to attach any significance to the fact that now, some two months later, the cavities in the contralateral lung are much smaller, for they were obviously distention cavities, which may well fluctuate in size.

The apparent detoxication of a certain proportion of patients which has been noted is difficult to correlate with the bacterial changes which take place within the cavity, for, whereas the preliminary specimens are almost invariably sterile, within a few days both the cavity effluent and the catheter track become heavily infected with secondary organisms. I have not felt satisfied that mechanical considerations provide a complete explanation of the frequent clinical improvement. Can it be that the claims of Lavalle (*Lancet*, 1937, ii, 1299) to influence favourably the course of tuberculous disease both in bone and in lung by driving an instrument through healthy tissue down to diseased tissue are worthy of serious consideration? He claims that by the process of lung puncture in about 200 cases he has produced in 76–80% decreased sputum and physical signs, and X-ray changes which show "absorption of the lesion and increased fibrosis." The method is, on the face of it, crude, empirical and apparently devoid of scientific basis, and as such it makes no appeal and has received little or no attention from phthisiologists in this country, although I have seen a series of orthopædic cases treated with apparent success. If results are indeed achieved by this strange technique, I should be inclined to attribute them to a form of gross shock therapy. It is not inconceivable that tissue response might be modified, temporarily at least, by local trauma. In the Monaldi technique we are submitting the patient to the same operative procedure, though our attention is directed to a different focus. Is it possible that in some of our cases we are observing the same clinical phenomena which have led Lavalle to make his therapeutic claims?

Harefield, Middlesex. L. E. HOUGHTON.

THE STUDY OF ÆTIOLOGY

SIR,—To Professor Ryle's list mentioned in his article of July 11 (which may be required, and for whose assistance workers in the field of ætiology will be grateful), might I make two all-important additions—system and statistics. These are of immediate and practical importance. In a year's analysis of my weekly list of panel patients I found that only an average of 3·6% were inmates of hospitals. If any attempt is made to correlate this 3·6% with the rest of complaining man it is obvious that the aid of statistics must be sought. By that science it is not only possible to test one's own hypotheses; it is easy and interesting to test the ætiological assumptions of workers whose opportunities are limited to the hospital type of patient.

The study of ætiology as it is peculiar to general practice seems to fall into three spheres: (*a*) the relationship of minor maladies to major diseases, (*b*) the relationship of a malady to the state of nourishment of the body at the time of its occurrence, (*c*) the relationship of the cause of death to the state of nourishment of the body throughout adult life. It is, therefore, the study of a lifetime and while statistics are used to analyse and correlate the various studies it would appear that explanations must be sought in physics as well as physiology, for no study of cause can be complete which does not seek to reach out towards the common science of cause. With the inevitably increasing delegation of the diagnosis and treatment of disease to the clinical units of hospitals and nursing-homes, the general practitioner should be finding more time to devote to this branch of his work, and with that conception of his duty may I be allowed to comment very briefly on the BMA Planning Commission's interim report.

In the twenty-five years which I have spent on recorded study I have accumulated records which occupy 47 sq. ft. of wall space. Research workers know that the best work can be done when one can be reasonably assured of several hours of uninterrupted study. General practitioners can only find those late at night. I never know the evenings when I may wish to look at some of the records, nor to which section of the records the study may lead me. If, through the adoption of the BMA scheme, those records come to be locked up each night in some clinical centre, then the remaining years of my medical life may be easier but they will cease to be as interesting.

Halifax. A. GARVIE.

SOLDIER'S DOCTOR

SIR,—As a regimental MO myself, may I support your editorial opinion, though not for quite the same reasons, that the job is pleasant and beneficial, and certainly not the whirlpool of apathy and boredom depicted by Dr. Jackson. If the job is well done there is a certain amount of spare time. How is this to be filled? Major McGlashan's letter in the same issue hints at the answer: in learning to recognise and evaluate the "third dimension," the cultural matrix that our patients live in, and its manifestation in their own mentality.

The great majority of doctors are quite incredibly uncultured. They do not even want to know anything about Greek literature, Roman organisation, and the Jewish scriptures—the three foundations of our culture; and their ignorance is only paralleled by their inability to restrain their contempt for such immaterial factors in the ætiology of disease. (A notable exception is Mr. Kenneth Walker, see his "Diagnosis of Man"). These hermit-crabs oscillate between the laboratory and the library, pass MD and MRCP exams at the age of 25, and at 35 produce their masterpiece, a 3-volume work on the Calcification of the Pineal Gland, the last two volumes being simply a bibliography of the previous literature.

This picture is barely an exaggerated one of many of my contemporaries, men who stayed in the EMS as long as they could (often with the active connivance of their seniors) to avoid the "apathy" of Army life. On the other hand, spare time can be amply filled with studying philosophy, than which there is no better mental training; or religion and mythology, or sociology and economics, for discerning the impalpable forces that guide our destinies; and so on, with time for exercise too. For myself, I am finding great pleasure in studying Christian origins, and in beginning to learn Chinese.

CAPTAIN RAMC (Home Forces).

SIR,—Had I not been taught in my youth to treat old age with undue reverence I might have congratulated your correspondent "Fogey," who has apparently missed the whole point of my letter, upon his choice of a non-de-plume. My criticism is directed against an inflexible medico-military system which gives the regimental MO far too little medical work to do (and most of that of so trivial a nature as to be well within the compass of an intelligent boy scout) with the very natural result that he gets "browned off" (as they say). I contend that his job might very easily be made much more attractive and instructive. He might, for example, be brought into much closer and more active contact—not merely as a spectator—with civil and military hospitals and civilian medical practitioners; he might with advantage be able to see the troops under his medical care through a much wider range of illness than at present; he might administer anæsthetics, perform minor operations or assist at major ones. I do not in the least mind being called an immalleable brick because I doubt whether malleability is a desirable quality in bricks; and I forgive Fogey for calling me—on no evidence whatsoever—a square peg in a round hole; but to the young army doctor, with whom we are concerned, it is not the shape of the hole that matters; it is its smallness and dullness that cramps his style. I agree with "Captain RAMC" that the young MO might spend more of his spare time in acquiring general education—I mistrust the blessed word culture—but what people do with their spare time is their own affair. I maintain that even the most

conscientious regimental doctor at home has far too much time on his hands which ought not to be spare; it ought to be devoted to active doctoring. If those in authority would provide opportunity for this, as they undoubtedly could, there would be no need for "pep" talks to a much-tried generation.

Crediton, Devon. L. N. JACKSON.

PRIVILEGE FOR HOSPITAL RECORDS

SIR,—The note under this heading in your issue for May 16 (p. 600) gave me the impression that the Court of Appeal had laid down some new principle of law upholding Mr. C. E. A. Bedwell's view (with which I substantially agree) that hospital records ought to be protected from disclosure to persons who contemplate bringing suit against the hospital or its staff. Actually the decision did nothing of the kind, but merely followed well-settled law.

Your account of the proceedings is perfectly correct: an aggrieved ex-patient, suing two surgeons and the committee of management for negligence, asked the court to grant him discovery of the relevant hospital records to assist him in building up his case. Discovery of documents is asked for and granted every day in the ordinary course of litigation, the rule being broadly that a plaintiff is entitled to use documents in the possession of the other side if they are reasonably necessary to him and not protected under any special rule of procedure. The question before the Court of Appeal related to two documents only: a report written by the consulting surgeon to the secretary-superintendent, and the letter covering it. The court refused to grant discovery of this report and the letter; but not because they were confidential documents made by a member of the medical staff in the ordinary course of the hospital's work. On the contrary, the hospital's advisers actually disclosed other confidential records to this patient on the master's order, and did not appeal in respect of them. The surgeon's report and letter were protected for the simple reason that they were written in expectation of a claim at law. The hospital claimed and were granted privilege, as you state, on the ground that these were documents passing between the committee of management, their solicitors and proposed witnesses for the defence in the action.

The privilege was legal, not medical. The law jealously protects from disclosure all communications passing between a man and his legal adviser, on the ground that the administration of justice requires their protection; the court merely applied this rule. It would be a pity if hospital managers were to believe that this decision protected all medical records from disclosure in future. Such records are no more privileged than are the books of a trading company, unless they happen to be prepared with litigation in view.

London, S.W.19. D. HARCOURT KITCHIN.

HOSPITAL OR DOMICILIARY CONFINEMENT

SIR,—I agree with Dr. Menzies in her regret at the higher proportion of bottle-fed babies among hospital cases, but I am not convinced that hospitalisation per se is to blame. Owing to the shifting population in this area I cannot produce accurate figures for 1939–40 to compare with hers and I must therefore accept her 10% as representative. To assess this 10% at its true value, I should like to know more of the circumstances which led these mothers to choose confinement in hospital and to make sure that they would have had a better chance of making a success of breast-feeding at home. The factors which lead a woman to choose hospital may be just those which detract from breast-feeding. One hears these women say: "My husband is away and I am quite alone." . . . "My mother and sisters are out all day and there is no-one to look after me." It is not so much accommodation that is lacking as responsible friends or relatives, and it is their help which the mother needs in getting back to domestic life when she is still convalescing. Without them she is liable to overtax her physical and mental abilities, and lactation suffers. But why blame the hospital? Let the health services and the relatives do their share.

Selection of cases for domiciliary confinement is difficult, and the mother's personal preference must weigh largely in deciding. Until facilities for dealing with unpredictable emergencies are improved, there will be cases which have to be transferred to hospital during labour. This being always to some degree detrimental to the mother, it would be unfair to deny her the right of hospital confinement if she desires it. Once delivered, most women can equally well be nursed at home. If, as Dr. Menzies suggests, home nursing is conducive to breast feeding, some modification of our service might be made, so that healthy mothers and infants are transferred early in the puerperium, substituting the home for the lying-in ward. Those whose home conditions are unsuitable might be prevailed upon to stay longer. At present they often go home too soon, though not necessarily by the wish of the hospital staff.

I am not impressed by the "evidence that insistence on the necessity for antenatal supervision may have developed fears in the pregnant woman." The publicity given to maternal mortality may have increased her awareness of the risks, but this sends her to the clinic where her fears are assuaged. No-one suggests that the conscientious mother who attends the welfare clinic and has her child vaccinated, inoculated, immunised and weighed is abnormally fearful. The same mother will seek prophylaxis for herself and her unborn child. I do not agree that hospital confinement surrounds childbearing with an atmosphere of abnormality. The young mother accepts hospital as the normal place, just as the older generation accepted the home. A happy "normal" atmosphere is essential, and in my experience of municipal maternity units it is uncommon to find sufficient abnormal women with "tales of suffering" to upset this. The majority are safely through their labour and engrossed in the next stage. With less selection of cases the proportion of abnormals will be less and any difficulty of this kind will disappear. Some of the older multiparæ previously confined at home find they get a better rest by entering hospital, provided that their minds are at ease about their homes.

Dr. Menzies is right in pointing out the deficiencies in the breast-feeding results of hospital mothers. Nevertheless I still think that for the majority of mothers of the artisan class the advantages of institutional midwifery outweigh its disadvantages.

St. Andrew's Hospital, E. 3. A. BARBARA FIELD.

DOSAGE OF LOCAL ANÆSTHETICS

SIR,—Professor Macintosh and Dr. Bannister, in their letter of July 18, reprove me for suggesting unnecessarily large doses of 'Percaine.' We are, of course, talking of two different things—the maximum permissible dose and the minimum effective dose after which we should strive. I have not found the maximum dose of percaine stated in any textbook, nor is there an adequate account of the treatment of overdosage. It is a fact that a number of anæsthetists and surgeons in London had previously accepted 150 c.cm. of 1:1000 percaine as a safe dose. An anæsthetist of exceptionally wide experience has recently told me of patients with jaundice and of one woman weighing only 4½ stone, all of whom had the full 150 c.cm. without ill effect. There is no account in the published work of convulsions occurring in patients who had had percaine alone. It has been suggested that the convulsions are due to asphyxia. This is not improbable in the first case I described; the second two had nitrous oxide and oxygen in routine proportions and their breathing was not unusually shallow.

Since meeting with these cases I have used considerably smaller doses than the maximum I suggested, but my impression has been that they have not been quite so effective. A subcostal block takes a large quantity of anæsthetic; many prefer an intercostal block which can be effected with some 70–80 c.cm. Nerve block for laryngectomy is not really comparable, and there can be few anæsthetists fortunate enough to have seen a sufficient number of cases to elaborate a routine method of anæsthesia.

Dr. Clendon (Aug. 1) raises the question of delayed detoxication from liver damage. We do not know that the liver is the only, or even the most important, site of detoxication of percaine. Recent work suggests that in some of the barbiturates the liver is not essential for this purpose. (Schiefley, C. H. and Higgins, G. M. *Amer. J. med. Sci.* 1940, **200**, 264. Kohn Richards, R. and Appel, M. *Anesth. & Analges.* 1941, **20**, 64.) In my

second case it is at least possible that disordered metabolism from the obstructive jaundice may have played a part, distinct from the results of delayed detoxication.

The ideal of solutions freshly prepared from percaine in ampoules, put forward by Dr. James (Aug. 8), is expensive for hospital use. The makers assure me that percaine is stable in solution for an indefinite period; the presence of alkalis renders it ineffective but not more toxic. Provided the hospital dispensary is reliable I can see no urgent reason for abandoning ready-made solutions.

Westminster Hospital. GEOFFREY ORGANE.

WORSER DOCTORING?

SIR,—I suspect that Dr. Fox wrote his letter of June 27 with the idea of starting a discussion. Surely it is impossible to lay down any hard and fast rule as to the number of potential patients any one doctor can look after efficiently? The area they are distributed over is the crux of the matter. In an urban or industrial area a much larger number can be attended than in a semi-urban and rural district, with a widely scattered population. The country doctor has to make long journeys, often over very bad roads, and often has to walk considerable distances too. I suspect the writer is one of the urban practitioners who are ignorant of rural conditions; yet these, because they are in such a large majority, decide all questions of medical policy. My two sons are in the RAMC. but I should hesitate to accept what they tell me of their work as being necessarily characteristic of the whole corps. I think it a pity for any doctor to charge the profession with not pulling its weight in the war effort. Doctors well over military age—unfortunately I am one— who were looking forward to being able to take things a little easier, now find they have to work harder than ever since their junior colleagues are in the Forces.

Monmouth. P. G. HARVEY.

CONTROL OF ASPIRIN SALES

SIR,—The increasing importance of aspirin as a suicidal agent is reflected in the Registrar-General's figures quoted in your annotation of Aug. 1 (p. 132), and it seems therefore reasonable to question the wisdom of the unrestricted sale now permitted. Placing this drug in the first or fourth schedules might control its sale but would not be regarded with favour by the vendors of proprietary brands. One solution might be to restrict the sale of the pure drug in this way, but exempt it provided it contained a small quantity of a suitable drug (e.g., gr. ¼ pulv. ipecac. per gr. 5 aspirin) acting in large doses as an emetic. Vomiting might then ensue before a would-be suicide could ingest a fatal dose.

Newcastle-on-Tyne. ALBERT FORSTER.

AGE-INCIDENCE OF DIPHTHERIA

DURING the present century a shift upward in the age-incidence of diphtheria from the preschool to the school age has been noted. E. A. Cheeseman, W. J. Martin and W. T. Russell [1] suggested that the decreasing size of the family might be a factor in this trend. A lack of exposure in early life, resulting from less crowded conditions, would leave more children susceptible at the time of entry into school life. Recently Martin has published further figures [2] contrasting years of heavy diphtheria prevalence with those in which prevalence was lower. In London he finds that the average age of attack is significantly rather higher in the years of heavy prevalence, and this change appears in each of four sets of boroughs grouped according to social class. On the other hand, the sex ratio does not change. Various explanations of this age shift are possible. If increased prevalence is due to an immunologically different strain of organism from that which has caused preceding diphtheria outbreaks, the older children who are immune to former strains may not necessarily be protected against the new strain. Alternatively the high incidence may imply a more continuous or heavier "bombardment," so that even the defences of older children may give way more often than they would do in other years.

1. *J. Hyg., Camb.* 1939, **39**, 181.
2. *Ibid*, 1942, **43**, 227.

Obituary

F. G. DAWTREY DREWITT

D.M. OXFD, F.R.C.P.

Dr. Dawtrey Drewitt, who died in London on July 29 at the age of 94, attracted his friends not by what he did but by what he was, and the many guests who attended the dinner given in his honour at the Savile Club shortly before the outbreak of war were witnesses of the warm affection in which he was held. Born at Burpham in Surrey, the son of Robert Dawtrey Drewitt, Frederic George was educated at Winchester and Christ Church, Oxford, where he graduated in 1871. He qualified from St. George's in 1876, took his DM in 1883, and was elected FRCP in 1888. For some years he served on the staffs of the Victoria Hospital for Children in Tite Street and of the West London Hospital, but private means allowed him to retire early and as he had many interests outside medicine his leisure was filled to his own enjoyment and the profit of others. He was on the governing body of the Ornithological Society, of the Zoological Society, and of the National Trust. He was a good draughtsman and etcher and exhibited at the Royal Academy. With his antiquarian and botanical knowledge he ably represented the College of Physicians on the committee of management of the Chelsea Physic Garden and till his death this office was one of his dearest charges. His *Romance of the Apothecaries Garden* was published in 1923 and quickly ran into several editions. His *Bombay in the Days of George IV* appeared in 1907, in 1927 he compiled *The Latin Names of Common Flowers*, and ten years ago he wrote his *Life of Edward Jenner*. Sir William Hale-White writes of Drewitt: It was very restful after a busy day to meet a man who did not want to talk shop or to argue, but who would discourse with knowledge about some plant, picture or book. And Drewitt could write as well as talk. His friends will miss him because he brought peace and quietude into their lives.

STEWART STANLEY MAIR

M.B. GLASG.; LIEUTENANT R.A.M.C.

Lieutenant Stewart Mair, who was killed at the age of 25 by enemy action in Malta during June, was the only son of the late Captain W. Craig Mair of Glasgow, who lost his life in the last war. Educated at Shawlands Academy, where he was dux medallist, and at Glasgow University, Mair graduated MB in 1939. After qualifying, he went to sea as a ship's surgeon and in May of the following year, now a temporary surgeon lieutenant RNVR, saw service in Norwegian waters, when his ship was sunk by air attack. On returning home he took up a house-surgeon's post in Gartlock Emergency Hospital till in March, 1941, he was commissioned in the RAMC. After training he volunteered for service overseas and in September of last year was drafted to Malta. Mair was a bright cheerful man of fine physique who made friends easily. It was characteristic of him that, having seen to the safety of the men who were with him during a heavy air-raid, he drove on with a Maltese volunteer to one of his aid-posts and on the way was killed. Although keenly interested in medicine, he found time for rugby and golf which he played with skill and enthusiasm.

W. Rimmer, Glasgow

ALEXANDER FRASER

M.B. EDIN., J.P.

Dr. Alexander Fraser, who died on July 27 at the age of 83, had been in practice at Caistor, Lincolnshire, for over thirty years. As MOH he worked wholeheartedly with the rural district council to improve conditions of living, and his wide interests outside medicine enabled him to serve his neighbours well. His knowledge of geology, for instance, was of great use in planning the water-supply to outlying villages, while his powers of observation and his uprightness made him a valuable magistrate. He lived on the site of a Roman encamp-

ment and found pleasure in tracing its outline. A native of Strathpeffer, he was educated at the Royal High School, Edinburgh, and at Edinburgh University where he graduated in 1884. He remained all his life a loyal Scotsman, but he learned to love and appreciate the country folk of Lincoln. He could draw out his patients till he knew their characters as well as their troubles. He leaves with them a memory of useful work and kindly help. Dr. Fraser is survived by his wife, three daughters and a son, Dr. A. C. Fraser, who is now serving as a squadron-leader in the RAF.

SIR WALTER SCHRÖDER

Sir Walter Schröder died in London on July 28 at the age of 87. Schröder became clerk to Dr. Edwin Lankester, then coroner for Middlesex, when he left school and the rest of his working life was spent in this service. In 1894 after formative years of apprenticeship he was himself appointed deputy coroner for central Middlesex, and later he became deputy to Dr. Danford Thomas whom in 1910 he succeeded as coroner for central London. Schröder held this office till his retirement in 1930. He was made a KBE in 1923. For some time his friends had regretfully watched Sir Walter advance in years and fail in health, but his death came as a shock to them. His quiet constancy and strength of character, and his vigorous and plucky rearguard action against illness, made him somehow seem permanent, so that in spite of the plain evidence no-one really expected him to go. He was so big and wholesome: he kept his youth to the end. We would hear that he was confined to his house for another long period; then back he would come, with his cheerful greeting to the Savage Club and the council table of the Medico-Legal Society, apparently good for many more years. As treasurer he always sat at the right hand of the president, and it will seem strange to receive our annual reminders that our subscription is due and to miss Sir Walter's neat signature! We shall never forget his ruddy face and venerable beard, his charming courtesy and friendliness, his mature, vigorous character, and his zest for life which he kept to the end.

D. H. K.

Notes and News

THE WAR ON DIPHTHERIA

THE Ministry of Health has sent to all welfare authorities in England and Wales a brochure describing the Government's anti-diphtheria programme. The ministry undertakes central publicity by advertising in Sunday newspapers and various weekly journals and women's weekly and monthly magazines, by broadcasts, editorial publicity, trailer films, and national displays in shop windows. For local publicity stereos are being provided for advertisements in local newspapers, and copies of an open letter to parents from Mr. Ernest Brown will be distributed through clinics and schools or by health visitors; cinema slides are available for free loan, and the film "Defeat Diphtheria" is being included in the general programmes of the Ministry of Information's mobile film units. In addition the Central Council for Health Education has produced a leaflet to supplement existing posters and pamphlets, a shop-window pamphlet and a bill for show in trains and buses. Welfare authorities are also advised, in the brochure, on press advertising and conferences, timing of campaigns and word of mouth publicity.

EPILEPSIA

WAR works havoc with worldwide associations. The International League against Epilepsy made a promising start in 1909, and for five years its magazine *Epilepsia* played an important part in building up a fund of common knowledge. But by 1915 the league had petered out and its journal was discontinued. At a meeting held in 1935 at the Lingfield Epileptic Colony, a group of members attending the International Neurological Congress in London resolved to restart the league, and from 1937 to 1940 *Epilepsia* was published once a year in Denmark, when war again intervened and necessitated a transfer to America. Copies of the 1941 issue which have now reached this country contain a preliminary notice of the Laymen's League against Epilepsy, which in America is enlisting the interest and help of the general public. For the rest this issue is a comprehensive and well-indexed survey of recently published work on epilepsy, ably edited by Dr. W. G. Lennox, who adds his own running commentary. Copies of the 1941 issue may be obtained through Messrs. H. K. Lewis, 136, Gower Street, W.C.1.

Royal College of Physicians of London

At a meeting of the college on July 30, with Sir Charles Wilson, the president, in the chair, the following fellows were elected officers for the ensuing year:

Censors, Dr. H. L. Tidy, Dr. A. G. Gibson, Dr. G. E. S. Ward, and Dr. Geoffrey Marshall; treasurer, Dr. C. Hinds Howell; registrar, Dr. H. E. A. Boldero; Harveian librarian, Dr. Arnold Chaplin; assistant registrar, Dr. Alan Moncrieff; members of the library committee, Dr. Cecil Wall, Dr. Henry MacCormac, and Dr. Reginald Hilton; finance committee, Dr. George Graham, Dr. Frank Edward Tylecote and Dr. Kenneth Harris.

The Moxon medal was awarded to Prof. L. G. Parsons for his observation and research in clinical medicine, especially in pædiatrics, the Weber Parkes prize to Prof. G. S. Wilson for his work on tuberculosis, and the Murchison scholarship to Dr. Hector John Anderson (St. Thomas's).

The following, having satisfied the censors' board, were elected to the membership:

M.D LPOOL

A. R. D. Adams, MD Lpool, H. S. Banks, MD Glasg., Raymond Daley, MB Camb., J. V. S. A. Davies, BM Oxfd, Joseph Denfield, MB Lond., J. R. Dow, MB Lond., R. M. Evans, MB Camb and Lpool, J. E. Gillespie, MD Dubl., I. R. S. Gordon, MB Camb., E. R. Gubbay, MB Lond., lieutenant, R.A.M.C., F. W. Gunz, MB Lond., J. T. Harold, MB Lond., A. M. Jones, MB Manc., D. W. Liddell, MB Lond., R. A. Moir, MB Lond., Frances J. Pounds, MB Lond. and G. E. O. Williams, MD Lpool.

Licences to practise were conferred on J. A. Judson, Janet W. Shrimpton, A. C. Sinclair, F. R. Wilde and on those named in the report of the meeting of the Royal College of Surgeons, and diplomas in ophthalmic medicine and surgery and in radiology were also conferred on those mentioned in that report. Diplomas in public health, psychological medicine, laryngology and otology and anæsthetics were conferred on those named at the meetings of the Royal College of Surgeons in our issues of June 20, p. 753, and July 18, p. 85.

Royal College of Surgeons of England

At an ordinary meeting of the council held on July 30, with Sir Alfred Webb-Johnson, the president, in the chair, Mr. Cecil Joll was elected a member of the surgical section of the board of examiners in dental surgery. It was decided to continue for the duration of the war the recognition of the six months' surgical practice required of candidates for the final examination for the fellowship of the posts of senior house-surgeon at the Devonport section of the Prince of Wales's Hospital, Plymouth, and of resident surgical officer and senior house-surgeon at the Royal Salop Infirmary, Shrewsbury. Arrangements were made for the institution of a research chair in ophthalmology tenable at the college and at the Royal Eye Hospital.

Diplomas of membership were granted to the following:

P. B. Adamson, Khairunnisa B. Ahmed, W. B. Alexander, E. B. Allen, J. N. H. Andrews, A. H. Ansári, Philip Arnold, J. P. B. Arthur, A. N. Ashworth, W. O. Attlee, A. le P. Avenell, D. J. Avery, Ursula M. Bailey, W. E. S. Bain, R. F. Barlow, E. T. Bassadone, J. A. Bassett, J. A. V. Bates, D. C. P. Battersea, Mary R. Bayliss, R. H. Beer, Jack Beeston, M. R. Beg, A. d'A. Bellairs, Elisabeth I. Bennett, Jack Besden, J. E. C. Bevan, G. A. Binns, C. A. K. Bird, N. N. Blaxland, T. H. Blennerhassett, V. Y. Bockner, Anne Bolton, W. H. Bond, M. M. Boyle, R. J. K. Brown, Hilda E. Bullen, N. R. Butler, J. S. Cainan, T. O. Candler, P. N. Cardew, F. S. Carter, A. W. H. Challis, Elinor H. Cleminson, F. C. Clouting, Frank Cockcroft, N. A. Cohen, G. V. Cole, J. G. L. Cole, P. J. Collard, Stella M. E. Cornes, J. C. F. Cregan, N. F. Crofts, G. H. R. Curnock, M. H. Dale, A. J. Danby, H. G. Danziger, I. N. Darbyshire, G. I. Davies, Audrey M. Dealler, John Dean, Margot H. Dickson, E. J. Doel, W. A. dos Santos, K. M. Duncan, D. H. Edwards, Lorna B. Egan, E. N. Emmerson, R. M. Emrys-Roberts, D. L. Evans, G. C. D. Evans, R. A. F. Evans, A. J. Fairrie, J. K. Farquhar, Stephen Fazekas, N. R. E. Fendall, J. H. L. Ferguson, G. E. Ffrench, A. B. Fieldsend, Mary FitzClarke, J. L. Fluker, Joan Freeman, A. R. Freitag, P. S. Gardner, J. B. A. Gibson, T. R. Gilchrist, Ennis Giordani, F. S. Glassow, Daphne I. L. Gleed, Edith L. Godwin, Arpad Goldberger, T. E. W. Goodier, N. J. Goorney, Eileen M. Goronwy, Gordon Graves, J. W. Graves-Morris, Beatrice A. J. Gregory, J. D. Grene, P. J. Haga, J. T. C. Haigh, R. D. M. I. Harkness, T. J. R. Harley, S. S. Hart, T. G. Harvey, Sheila Haslop, Patricia L. F. Heaton, Angela B. G. Hefferman, Edith Hertz, W. J. B. Hett, G. E. Hicks, D. H. Hiley, Don Hilson, E. J. Holborow, R. A. Holden, R. H. Hughes, Dorothy M. Hyde, Harry Isenberg, P. D. James, H. V. Jones, J. G. Jones, R. N. Jones, J. H. Joseph, R. N. H. N. Kahan, C. H. Kaye, H. R. Kefford, B. J. Kelleher, D. E. Kessler, B. T. Kieft, Bruno Klein, J. M. S. Knott, E. L. Knowles, D. G. Lambley, T. C. Langdon, Aaron Lask, D. N. Lawson, H. M. Lawson, J. H. T. Lawton, A. G. Leacock, Alice M. Lloyd, J. C. Lloyd, G. C. Lloyd-Roberts, H. E. Lockhart-Mummery, R. L. Lunt, I. A. J. McCready, S. A. MacDonald,

Annabella J. McGowan, A. B. McGrigor, J. S. McNair, J. J. Macneil, E. A. Malkin, Gwyn Martyn, R. M. S. Matthews, Helen M. Mayer, Grace E. Mellows, S. J. T. Merryfield, R. B. Meyer, R. G. Moore, K. C. Morris, H. C. Mukerji, C. A. B. Murphy, G. C. Myddelton, G. J. Myers, J. F. Neil, Leigh Neville, J. L. Newman, H. A. B. Nicholls, J. C. Nixon, C. L. Noble, Deirdre R. B. O'Brien, Richard Oddy, A. F. Ollerenshaw, H. F. Osmond, D. A. H. O'Sullivan, Ralph Owlett, Nancye M. Park, H. M. Parsons, A. J. Partridge, J. P. Patel, V. G. Patel, Peter Pattison, J. P. Paul, J. D. Paulett, J. F. Pearce, K. G. Pendse, E. S. Perkins, J. A. Peters, A. B. Philip, Jacob Phillips, R. M. Pitts, Francis Pollak, J. M. B. Pooley, Alison C. P. Porter, E. C. Poulton, Charles Pownall, T. J. G. Price, Mary Pringle, P. E. Prudhoe, R. T. M. Puddicombe, S. H. Purser, I. M. Ramsden, A. P. H. Randle, P. K. Renshaw, A. S. Riddell, D. S. Ridley, Dorothy Roberts, D. J. Robertson, W. C. Robinson, Watson Rogers, Glenys M. Roper-Hall, H. M. J. Rowan, A. J. D. Rowlands, J. H. B. M. Rowlaods, J. K. Rowntree, P. F. Rudd, D. C. Sachdeva, J. G. Salter, M. C. Sanyal, Irene M. Sarner, Erich Schindel, G. B. D. Scott, Sophy H. L. Scott, T. O. Scudamore, D. E. Sharvill, C. H. Shaw, M. P. Sherwood, Duncan Shiers, Marks Shrieber, G. A. Silley, W. B. G. Simmonds, J. H. Simpson, N. R. W. Simpson, J. F. P. Skrimshire, R. D. Slack, A. P. Smith, H. N. Smith, R. S. Smith, W. A. Smurthwaite, P. R. Sondhi, V. H. Springett, H. G. Stack, F. H. Staines, P. S. Steen, B. A. F. Stephens, D. N. Stewart, J. G. Stewart, L. V. Sthyr, Alan Stoddard, J. C. Swanson, V. R. Tadros, G. H. Templeman, D. C. Tennant, M. N. Teubes, H. O. Thomas, B. A. Thompson, J. R. Thompson, A. L. Thrower, D. C. Thursby-Pelham, R. H. Townshend, Bernard Townsley, R. N. Tronchin-James, A. F. Tuboku-Metzger, S. G. Tuffill, Leslie Turgill, G. S. Udall, G. H. Valentine, A. E. Wall, D. K. T. Wallace, G. T. Wallace, A. D. J. Watt, G. H. Wattley, N. C. Welply, J. C. N. Westwood, E. P. Whitaker, D. A. White, E. N. Whitley, R. U. Whitney, H. G. Whitworth, B. F. Wickham, Mark Wilks, D. I. Williams, J. I. Williams, T. M. Williams, L. A. H. Willson, Anna M. T. Wilson, F. P. Winbourne, J. L. Withey, Geoffrey Worden, G. H. Wright, H. B. Wright, J. K. Wright, H. J. Young, and Alwyn Zoutendyk.

The following diplomas were granted jointly with the Royal College of Physicians:

DOMS.—Margaret L. Clay, K. D. Foggitt, S. S. Freedman, D. P. Gurd, H. E. Hobbs, M. B. Longinotto, W. T. C. Lumley, G. O. M. Neatby, R. L. Richards, and P. M. Wood.

DMR.—F. H. Bonnell, G. C. D. Evans, R. C. M. Hadden, H. J. Johnson, Margaret D. Snelling, and J. H. Stranger.

The honorary medal of the college has been awarded to Lord Nuffield in recognition of his service in "assisting the improvement of natural knowledge and of the healing art and of his many liberal acts and distinguished labours inspired by the desire to advance the science and practice of medicine and surgery." The medal was instituted 140 years ago and this is the nineteenth occasion on which it has been awarded.

D.T.M. & H.

The committee of management of the Conjoint Board have decided to discontinue the examinations for the diploma in tropical medicine and hygiene until further notice.

King Edward's Hospital Fund

In the last year the Fund has distributed £320,000, and receipts were over £280,000. Since its foundation the fund has distributed over ten million pounds.

Medical Superintendents' Society

A meeting of the executive committee will be held at the Midland Station Hotel, Derby, on Saturday, Aug. 15, at 2.15 PM.

Awards for Nursing

Over 10,000 members of the Civil Nursing Reserve have now earned good service awards. A number have also qualified for the special award presented to those who have given service in nursing patients suffering from tuberculosis or infectious diseases. The reserve now has over 28,000 members in whole-time employment and 18,000 in part-time.

Army Dental Service

Colonel A. B. Austin has been appointed director of the Army Dental Service, in succession to Major-General D. Clewer, who retires on Aug. 31.

High-frequency Apparatus

The Home Office has relaxed the order forbidding any person from possessing or using a high-frequency apparatus with an output of over 10 watts except under permit from the Postmaster General. Hitherto permits have only been issued to hospitals and similar institutions, but under the new order any person, including aliens, may apply to the Postmaster General for a permit, which will not, however, be issued until the applicant has installed a screen and mains filter in accordance with Post Office specifications. Applications should be addressed to the Engineer-in-Chief, Radio Branch (W. 2/8), General Post Office, Harrogate, Yorkshire, who will also give particulars of the screening required.

Medical Casualties

The following casualties have been announced:

Died of Wounds.—Surgeon Commander James Michael McNamara, MB NUI, HMS *Hermes.*

Missing, presumed killed.—P/T/Surgeon Lieutenant J. D. James, MRCS, RNVR, MHS *Belmont.*

Prisoners of War.—WS/Captain W. G. H. Allen, MD Durh.; T/Major J. D. Fraser, MD Glasg.; Major G. F. Harrison, MB Lond.; Major J. H. Prain, MB St. And.; WS/Captain A. C. P. D. Thomson, MB Edin.; Lieutenant J. W. Anderson, FRCSE; T/Major J. D. A. Gray, MB Edin.; Captain A. F. Hutchison, MB Durh.; WS/Captain J. A. MacLeod, MB Glasg.; T/Major O. G. Prosser, MB Aberd.; Lieut.-Colonel J. K. Steel; and T/Surgeon Lieutenant R. St. C. Mooney, MB Dubl., RNVR, HMS *Bedouin.*

Missing.—Major J. A. G. Carmichael, MRCS, and Captain Geoffrey Lancaster, MB Manch. (in the Middle East); and Surgeon Lieutenant J. G. Reed, MRCS, RNVR (after the evacuation of Singapore).

Dr. Elsie Crowe is now officially presumed a prisoner of war in Sumatra.

Medical Honours

The George Medal has been awarded to Squadron-Leader Frank George Mogg, M.R.C.S., Auxiliary Air Force.

One night in May an aircraft crashed on the edge of an aerodrome and immediately burst into flames. Three members of the crew were thrown clear of the wreckage and killed; a fourth managed to extricate himself from the tail turret. A wireless operator was, however, trapped in the blazing fuselage, and Squadron-Leader Mogg, clad only in overalls over his pyjamas, went into the blazing wreckage to rescue him. The aircraftman who accompanied Mogg lay on the floor and using a greatcoat as a shield was able to afford some protection while he administered morphia to the injured operator. During the time the officer and airman were working in the wreckage two oxygen bottles exploded within a few feet of their heads and there was grave danger that others might have done so at any time. Squadron-Leader Mogg was badly scorched and sustained burns to his hands and wrists, but he accompanied the dying wireless operator by ambulance to hospital some six miles away. He then fainted and had to receive medical attention.

The DSC has been awarded to T/Surgeon Lieutenant G. P. Fahnri, MD, RCNVR, for great bravery and devotion to duty.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as an indication that they are necessarily available for export.

Appointments

SMITH, A. H. D., MB EDIN; consulting surgeon to the Llanelly District General Hospital

The following examining factory surgeons have been appointed:—

STEPHEN, J. H., MB ABERD: Thame, Oxfordshire;
GRAY, A. P., MB ABERD: Wingate, Durham;
THOMPSON HILL, W. A., MRCS: Llanrwst, Denbigh;
KYDD, J. L. MB GLASG: Belshill, Lanark;
COOPER, J. D., BA CAMB, MRCS: Princes Risborough, Bucks; and
MITCHESON, G. F. L., BM OXFD: Shoreham, Sussex.

Colonial Medical Service.—The following appointments are announced:—

GUTHRIE, J. P. MRCS: MO, Kenya.
LUCEY, J. F., MB CAMB: MO, Tanganyika Territory.
MICHIE, CHARLES, MB ABERD: MO, Sierra Leone.
DE BOER, H. S., MRCS, DPH, DTM & H: DMS, Uganda; and
PATTON, W. H. G., MB LPOOL: MO, Kenya.

Births, Marriages and Deaths

BIRTHS

HARDIE.—On Aug. 3, at Great Malvern, the wife of Captain A. W. Hardie, RAMC—a son.

HUTSON.—On Aug. 4, at Newcastle-on-Tyne, the wife of Captain C. S. M. Hutson, RAMC—a daughter.

SLOAN.—On July 26, at Landour Mussoorie, India, the wife of Lieutenant T. B. M. Sloan, IMS—a daughter.

STRANGE.—On Aug. 4, at Newcastle-on-Tyne, the wife of Mr. F. G. St. Clair Strange, FRCS—a son.

MARRIAGES

GUILD—INNES.—On Aug. 5, in London, William John Forbes Guild, FRCSE, surgeon lieut.-commander RN, to Joan Elisabeth Innes.

HILL—CUMMING.—On March 20, in Lagos, Thomas Rowland Hill, major RAMC, to Janet Sybil Cumming.

DEATHS

GRANGER.—On Aug. 4, at Exmouth, Thomas Arthur Granger, CMG, MB EDIN, colonel IMS, retd.

JERRARD.—On Aug. 7, in Exeter, John Henry Frederick Jerrard, MB CAMB, of Honiton, Devon.

THOMPSON.—On Aug. 4, James Thompson, MC, MB EDIN, FRCSE, JP, of Devizes, aged 47.

VERNON DAVIES.—On Aug. 4, at Tunbridge Wells, Arthur Vernon Davies, OBE, MB MANC, MP for Royton (Lancs) 1924–31, aged 70.

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Valuable Scholarships and Prizes are awarded on the results of examinations held annually.
The work of this Faculty, which has been carried on at Birmingham for the past two sessions, will be resumed in the College buildings in London on 22nd September, 1942.
The Prospectus and full information may be obtained on application either to the Sub-Dean of Medical Science, King's College, or to the undersigned.
Strand, W.C.2. S. T. SHOVELTON, M.A., Secretary.

University of London.

A full-time Course for the ACADEMIC POSTGRADUATE DIPLOMA IN MEDICAL RADIOLOGY has been arranged by the Medical Schools of the University. The Course begins in OCTOBER, 1942, and application for admission should be made as early as possible to Professor W. V. MAYNEORD, 32, Welbeck-street, London, W.1.

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THE WINTER SESSION OPENS ON THURSDAY, OCTOBER 1st

The London Hospital remains the headquarters of the Medical School. The beds have been reduced from the pre-war figure of 900 to 350; 100 are held in reserve for air-raid casualties, but an Annexe has been opened at Brentwood with 360 beds. The organisation of the Emergency Medical Service at the beginning of the war brought the Medical School into relation, through the London Sector Scheme, with all the Hospitals in Essex and many in London, Middlesex and Hertfordshire.
Students beginning the clinical course spend the first clinical year at the Annexe at Brentwood under the Honorary Staff of the London Hospital. After a year of clinical experience in the wards they move to the laboratories of Chase Farm Hospital at Enfield for a course in Pathology, given by the Pathologists to the London Hospital. During this course, students are taken to Claybury Mental Hospital for a course in Mental Diseases and to the Eastern Fever Hospital for a course in the Acute Fevers. After the course in Pathology, students are sent for six months to gain experience as Student House Officers (free board and lodging and a salary of £50 a year) or as E.M.S. Dressers (free board and lodging) at Sector Hospitals. During the third clinical year, all students return to the London Hospital for clinical work in the wards and Out-patient Departments and for systematic lectures in preparation for the Final Examinations. Twelve students live in the London Hospital free of charge as Emergency Dressers. Others can live at home or at the nearby County Council Hospitals (many as E.M.S. Dressers) and come to the Hospital every day.
The experience to be gained at the London Hospital under war conditions is greater and more varied than it was before the war. Students now have the advantage of seeing many aspects of the hospital work of the country and opportunity for practical clinical work as Student House Officers and Dressers at Sector Hospitals.
The Departments of Anatomy, Physiology and Pharmacology are temporarily transferred to Cambridge under our staff of Professors and Readers. Courses for the Primary Fellowship are held in Cambridge twice a year in conjunction with St. Bartholomew's Hospital. Chemistry, Physics and Biology are taught at Queen Mary College, also temporarily in Cambridge. The Price Entrance Scholarship in Science (Chemistry, Physics and Biology) will be awarded on an Examination in April.
Three entrance scholarships in Anatomy, Physiology, Pharmacology and Biochemistry are awarded in April and June. Funds to the value of over £100,000 are available for Medical Research.
The Dental School remains at the London Hospital and provides teaching in all branches of Dental Surgery. The attendance of patients in the Dental Out-patient Department has been little influenced by the war. The Francis Farmer Entrance Scholarship (in Chemistry, Physics and Biology) is awarded in September.
The College provides an Athenæum, Dining Hall, Library, Museum, Gymnasium, Fives Court, three Tennis Courts and two Squash Courts. All are in use during the war. The athletic ground at Hale End can easily be reached from the Hospital by train or road.
Further details may be obtained from the Dean, A. E. CLARK-KENNEDY, M.D., F.R.C.P., Physician to the Hospital and Fellow of Corpus Christi College, Cambridge, who is always ready to see students by appointment at the London Hospital or at Corpus Christi College at Cambridge.
Turner-street, London, E.1. Station: Whitechapel (Underground) opposite the Hospital. Tel.: BIShopsgate 2456.

The Milroy Lectures on State Medicine
AND PUBLIC HEALTH.

The Council of the ROYAL COLLEGE OF PHYSICIANS OF LONDON are prepared to receive applications for the office of MILROY LECTURER for 1944.

Applications must be addressed to the REGISTRAR, Royal College of Physicians, Pall Mall East, on or before 18th September, 1942, and should contain a statement of the division of the subject selected by the candidate.

The Course consists of Two Lectures.

The Lectures are to be given on a Tuesday and Thursday in February or March, 1944.

A copy of Dr. Milroy's "Suggestions" on the subject of his bequest, and information as to the emolument, may be obtained from the Registrar.

July, 1942.

St. Mary's Hospital Medical School,
W.2.
(UNIVERSITY OF LONDON.)

PRIMARY F.R.C.S. COURSE.

A Course of Instruction for the December EXAMINATION will begin on MONDAY, 14TH SEPTEMBER, 1942, in the following subjects:—

ANATOMY and EMBRYOLOGY.
PHYSIOLOGY and HISTOLOGY (with practical classes).

Fee for the course £16 16s., or £9 9s. for either section separately.

For further particulars apply to the SCHOOL SECRETARY.

BRITISH POSTGRADUATE MEDICAL SCHOOL
(UNIVERSITY OF LONDON.)

A PRACTICAL COURSE ON
OPERATIVE WAR SURGERY OF THE CADAVER
will be given by
MR. A. K. HENRY, M.B., M.Ch., F.R.C.S.
Consisting of Seven Sessions.

The course will commence on the 24TH AUGUST, 1942, at 2.30 P.M., and be held every afternoon during the week. On Friday there will be an additional session from 10 A.M. to NOON, and the last session will commence at 10 A.M. on Saturday, 29th August, 1942.

The course is strictly limited to 20 students and is intended for officers. Applications for admission should be made to the DEAN, British Postgraduate Medical School, Ducane-road, W.12.

The fee for the course will be five guineas, but no fee will be charged in the case of officers of the Armed Forces who are nominated for the course by their respective Director-Generals.

L. M. S. S. A.

FINAL EXAMINATION: SURGERY, October 12th, November 9th, December 7th, 1942; MEDICINE, October 19th, November 16th, December 14th, 1942; MIDWIFERY, October 20th, November 17th, December 15th, 1942.

For regulations apply REGISTRAR, Apothecaries' Hall, Black Friars-lane, London, E.C.4.

Telephone: WELbeck 2728 Telegrams: "ASSISTIAMO, LONDON"
For MEDICAL, SURGICAL, and
MENTAL NURSES
Male or Female
THE NURSES' ASSOCIATION
In conjunction with the MALE NURSES' ASSN.
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CITY OF LONDON MENTAL HOSPITAL
Near DARTFORD, KENT.
Ladies and Gentlemen received for treatment under certificates, and without certificates as either VOLUNTARY or TEMPORARY PATIENTS, at a weekly fee of £2 9s., and upwards.

THE COPPICE, NOTTINGHAM
HOSPITAL FOR MENTAL DISEASES
President: The Right Hon. LORD BELPER

REGISTERED HOSPITAL for Voluntary, Temporary, or Certified PRIVATE PATIENTS of UPPER and MIDDLE CLASSES. Own kitchen garden. Modern forms of treatment, including Electro-shock Therapy. Out-door games, cinema visits, motor drives arranged. Visiting Chaplain.
For terms, &c., apply to: Dr. G. M. WODDIS, Medical Superintendent. Telephone: 64117 Nottingham.

FENSTANTON at "FIVE DIAMONDS," Chalfont St. Giles, Bucks
A Private Home for the Care and Treatment of a limited number of LADIES with Mental and Nervous Disorders. Certified, Voluntary, and Temporary Patients received. Mansion with 12 acres of ground. (See *Medical Directory*, p. 2362.) Apply Resident Physician. Telephone: Little Chalfont 2046. Station: Chalfont and Latimer.

HEIGHAM HALL, NORWICH
PRIVATE MENTAL HOME for Nervous and Mental Illness. All forms of treatment available. Fees from 4 gns. per week upwards according to requirements. Vacancies occasionally exist at reduced fees on the recommendation of the patient's own physician.
Apply to Dr. J. A. SMALL. Telephone: Norwich 20080

THE OLD MANOR, SALISBURY Telephone: 3216 & 3217
A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS
Extensive grounds. Detached Villas. Chapel. Garden Produce from own gardens. Terms very moderate.
CONVALESCENT HOME AT BOURNEMOUTH
standing in 12 acres of ornamental grounds, with separate villas, tennis courts, etc. Patients or Boarders may visit the Home by arrangement.
Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury.

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This Sanatorium is established for the treatment of Tuberculosis of the Lungs and the Pleural Cavities. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level. Average rainfall 29·57 per annum. Full day and night Nursing Staffs. X-ray plant. Every facility for Artificial Pneumothorax and for operations on the Chest. Electric Lighting. Central Heating.
For particulars apply to Medical Superintendent.
H. MORRISTON DAVIES, M.D., M.Ch. (Cantab.), F.R.C.S., Llanbedr Hall Ruthin, N. Wales.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15
Telegrams: "Alleviated, London" Telephone: Rodney 2641-2642
A Private Mental Hospital, for Ladies and Gentlemen suffering from Nervous and Mental Illness, where the amenities of a comfortable home are combined with full investigation and every well-established modern treatment.
Terms from 3½ guineas weekly.
Illustrated Prospectus may be obtained from the Physician Superintendent.

THE LAW NURSING HOME
ROCHDALE (Lancs)
A Private Hospital, exclusively for the treatment of POST-ENCEPHALITIC PARKINSONISM, PARKINSON'S DISEASE and ALLIED DISORDERS
Founder: The late SIR A. J. LAW, J.P., M.P.
The Nursing Home is governed by Trustees; any surplus is utilized to help patients who cannot afford full fees. Extensive grounds. Hydro. Expert Massage and Physical re-education. Dietary treatment. Equipped with every laboratory apparatus for the investigation and treatment of the disease. Results of the BULGARIAN TREATMENT published (*Lancet*, 1939, 1, 693) approx.: 300 patients treated in the last 3 years. Terms moderate. Further particulars apply Medical Superintendent. Tel.: Rochdale 2960.

ST. ANDREW'S HOSPITAL

FOR NERVOUS AND MENTAL DISORDERS

NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

PRESIDENT: THE MOST HON. THE MARQUESS OF EXETER, K.G., C.M.G., A.D.C.

MEDICAL SUPERINTENDENT: THOMAS TENNENT, M.D., F.R.C.P., D.P.H., D.P.M.

This Registered Hospital is situated in 130 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble; temporary patients, and certified patients of both sexes are received for treatment. Careful clinical, bio-chemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE

This is a Reception Hospital in detached grounds with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the complete investigation and treatment of Mental and Nervous Disorders by the most modern methods: insulin treatment is available for suitable cases. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombieres treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-Ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High-frequency treatment. It also contains Laboratories for bio-chemical, bacteriological, and pathological research. Psychotherapeutic treatment is employed when indicated.

MOULTON PARK

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupational therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (TELEPHONE: No. 2356 and 2357 Northampton), who can be seen in London by appointment.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5

Telegrams: "PSYCHOLIA, LONDON"

FOR THE TREATMENT OF MENTAL DISORDERS

Telephone: RODNEY 4242 (3 lines)

Completely detached Villas for mild cases. Voluntary Patients received. Twenty acres of grounds; own garden produce. Hard and grass tennis courts, putting greens, Recreation Hall with Badminton Court, and all indoor amusements. Occupational therapy, Calisthenics, Actino-therapy, prolonged immersion baths, shock and also modified insulin treatment. Chapel.

Senior Physician, Dr. HUBERT JAMES NORMAN, assisted by a resident Medical Staff and visiting Consultants

An Illustrated Prospectus giving fees, which are strictly moderate, may be obtained upon application to the Secretary

The Convalescent Branch is HOVE VILLA, BRIGHTON, and is 200 ft. above sea-level

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A Private Clinic, the first in Great Britain, for investigation and treatment of all forms of disease, except infectious and mental

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Inclusive charges — Apply SECRETARY — Telephone: Ruthin 66

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FOR EARLY AND CONVALESCENT CASES — Recreational Therapies are held daily by skilled Leaders

The house stands high with spacious balconies and extensive views of the South Devon Coast. Beautiful garden. Own Dairy in 25 acres. Private road to beach. There is also a charming house, EBWORTHY, MANATON, DARTMOOR, situated in 20 acres, 1100 ft. up for bracing moorland air

Resident Physicians—BERTHA M. MULES, M.D., B.S. ANNE S. MULES, M.R.C.S., L.R.C.P. *Telephones*—STARCROSS 259 and TEIGNMOUTH 289

HAYDOCK LODGE,

NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from Mental and Nervous Disorders, Alcoholism and Drug Addiction, either voluntarily, temporarily, or under certificate. Patients are classified in separate buildings according to their mental condition. Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT. *Telephone:* Ashton-in-Makerfield 7311. *Telegraphic Address:* Wootton, Ashton-in-Makerfield.

SHAFTESBURY HOUSE

FORMBY-BY-THE-SEA
Nr. LIVERPOOL

Specially built and licensed for the care and treatment of a limited number of Ladies and Gentlemen suffering from NERVOUS and MENTAL breakdown. Voluntary and certified patients received. Ladies also admitted as Temporary Patients without certification. Terms moderate. *Apply*, RESIDENT PHYSICIAN, who may be seen in Liverpool, by appointment. *Tel. No.* 8 *Formby.*

CHEADLE ROYAL

CHEADLE
CHESHIRE

A Registered Hospital for MENTAL DISEASES, and its Seaside Branch, GLAN-Y-DON, Colwyn Bay, N. Wales

THE object of this Hospital is to provide the most efficient means for the treatment and care of those of the Upper and Middle Classes suffering from MENTAL and NERVOUS DISEASES. The Hospital is governed by a Committee appointed by the Trustees of the Manchester Royal Infirmary. VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS RECEIVED

For Terms and further information apply to the MEDICAL SUPERINTENDENT *Telephone:* GATLEY 2231

THE RETREAT, YORK

The Pioneer Hospital, opened 1796, for the humane treatment of those suffering from Nervous and Mental Disorder

This Hospital of 200 beds, administered by a Committee of the Society of Friends, combines what is best in the investigation and treatment of nervous illness with a sympathetic and friendly atmosphere. Last year 156 patients were admitted, of whom 132 were voluntary cases.

Much curative work is accomplished in our mental hospitals to-day and the recovery rate compares very favourably with that of our general hospitals.

For information and terms of admission apply to:—
The Physician Superintendent,
ARTHUR POOL, M.R.C.P.
(Telephone: York 3612)

THE COTSWOLD SANATORIUM

On the Cotswold Hills seven miles from Cheltenham, Stroud and Gloucester. Fully equipped for the treatment of all forms of Tuberculosis. **Terms: 5½ to 9½ guineas per week, inclusive.** Full particulars from MEDICAL SUPERINTENDENT, Cotswold Sanatorium, Cranham, Gloucester. *Telephone:* Witcombe 81. *Telegrams:* "Hoffman, Birdlip."

CRICHTON ROYAL, DUMFRIES — FOR NERVOUS AND MENTAL DISORDERS

Cases of Alcoholism and Drug Addiction are admitted. Every facility for individual treatment on the most modern lines **Special Department for Insulin Therapy.** Fully equipped Gymnasium, Golf Course, and Indoor Swimming Pool. Specially trained Occupational and Recreational Therapists.

Medical Certificates given anywhere in the British Isles are valid for admission of patients.

Physician Superintendent: **P. K. McCOWAN, J.P., M.D., F.R.C.P., D.P.M., Barrister-at-Law.** *Telephone:* Dumfries 1119.

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REDHILL, SURREY

For MENTAL DEFECTIVES of all ages

Training under medical supervision. Schools, Farm, Trade Workshops, Recreations. Fees £125 to £375 p.a. Election by votes of subscribers at reduced terms for necessitous trainable cases.
Apply, Secretary. Tel.: Redhill 344.

SPRINGFIELD HOUSE

'Phone: BEDFORD 3417. **Near BEDFORD**
For Mental Cases with or without Certificates.
Ordinary Terms: Five Guineas per week (including Separate Bedrooms for all suitable cases without extra charge).
For forms of admission, &c., apply to the Resident Physician, CEDRIC W. BOWER.
INTERVIEWS IN LONDON BY APPOINTMENT.

CHISWICK HOUSE,
PINNER, MIDDLESEX.
Telephone: PINNER 234.

A Private Hospital for the Treatment and Care of Mental and Nervous Illnesses in both Sexes.
A modern country house, 12 miles from Marble Arch, in attractive and secluded surroundings. Fees from 10 guineas per week inclusive. Cases under Certificate, Voluntary and Temporary Patients received for treatment.
DOUGLAS MACAULAY, M.D., D.P.M.

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THE MAGHULL HOMES FOR EPILEPTICS (Inc.)
MAGHULL, Near LIVERPOOL
Open Air Occupation and Recreation for Patients, Farming, Gardening, Football, Cricket, Tennis, Bowls, etc. School recognised by Board of Education.

FEES— 1st Class (men only)	from £3	per week
2nd Class (men and women)	„ 37/6	„
3rd Class (men and women) supported by—		
Public Assistance Committees	„ 27/6	„
Education Committees	„ 33/6	„
Private	„ 21/-	„

For further particulars apply to—
C. EDGAR GRISEWOOD, A.C.A., 30, Exchange Street East, LIVERPOOL. 2

East Ham Memorial Hospital,
Shrewsbury-road, E.7.

Applications are invited from registered medical practitioners (Male and Female) for the following appointments, to become vacant on 22nd August:—
HOUSE SURGEON AND CASUALTY OFFICER (A), including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months. Salary is at the rate of £120 per annum, with full residential emoluments.
HOUSE PHYSICIAN (B2). Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply, when appointment will be limited to six months. Salary is at the rate of £200 per annum, with full residential emoluments.
Applications, stating full particulars, accompanied by copies of three testimonials, should be forwarded immediately to—
REGINALD PERRY, Secretary-Superintendent.

Queen Mary's Hospital for the East END, E.15.

Applications are invited for an HONORARY ORTHOPÆDIC SURGEON to the above Hospital. The appointment, which is in the first instance for the duration of the war, necessitates one out-patient session a week, and the supervision of the fracture clinic.
Candidates must be Fellows of a Royal College of Surgeons engaged in Consulting Practice.
Application to be sent forthwith to—
BERNARD T. HEMPEL, Captain, Chairman.

Bolingbroke Hospital,
Wandsworth Common, S.W.11.

Applications are invited from registered medical practitioners (Male) for the appointment of a HOUSE PHYSICIAN AND CASUALTY OFFICER (A), to become vacant on the 1st September, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41. Salary is at the rate of £120 per annum, with full residential emoluments. The appointment is for six months.
Applications, stating age, nationality, qualifications, and experience, and accompanied by copies of three recent testimonials, should be sent immediately to—
W. S. RANDOLPH BISS, Secretary-Superintendent.

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF CHEMISTRY tenable at the ROYAL CANCER HOSPITAL. Salary £1000 a year. Applications (ten copies) must be received not later than first post on Tuesday, 1st September, 1942, by the ACADEMIC REGISTRAR, University of London, Richmond College, Richmond, Surrey, from whom further particulars should be obtained.

Queen Charlotte's Maternity Hospital,

Goldhawk-road, Hammersmith, W.6.

Applications are invited from registered medical practitioners for the appointment of ASSISTANT RESIDENT MEDICAL OFFICER (B1), Male or Female, for three months. Salary £80 per annum, with full residential emoluments. Duties to commence on 1st October, 1942. On completion of the three months, the selected applicant will be expected to apply for the post of Senior Resident Medical Officer (B1), also for three months. Salary £100 per annum. Applicants should have held house appointments and had obstetric experience. Preference will be given to candidates holding diploma of F.R.C.S. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Applications, stating age, qualifications with dates, nationality, previous appointments, and accompanied by one copy of three recent testimonials, should be sent by 2nd September, 1942, to—

SEYMOUR LESLIE, Acting Secretary-Superintendent.

British Postgraduate Medical School.

(UNIVERSITY OF LONDON.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), to become vacant on the 1st October, 1942, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41. The appointment will be for a period of six months. Salary is at the rate of £105 per annum, with full residential emoluments.

Applications should be addressed to the DEAN, British Postgraduate Medical School, Ducane-road, Shepherd's Bush, W.12, together with copies of three recent testimonials, not later than Tuesday, 1st September, 1942.

National Hospital, Queen-square, W.C.1.

(For the Relief and Cure of Diseases of the Nervous System, including Paralysis and Epilepsy.)

Applications are invited from registered British medical practitioners for the appointment of RESIDENT MEDICAL OFFICER (B1), to become vacant on 1st September, 1942. Applicants should already have held house appointments. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply. Salary is at the rate of £150 per annum.

Applications, stating age, qualifications, and experience, accompanied by copies of three testimonials, should be forwarded on or before 28th August to the SECRETARY.

West London Hospital,

Hammersmith, W.6.

APPOINTMENT OF RESIDENT ANÆSTHETIST AND E.N.T. AND OPHTHALMIC HOUSE SURGEON (B2).

Applications are invited from registered medical practitioners, Male and Female, for the above appointment to become vacant on 1st October. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply when appointment is limited to six months, terminable by one month's notice on either side. Salary according to experience but not less than at the rate of £100 per annum, with the usual residential emoluments.

Applications, stating age, qualifications with dates, nationality, experience, and present post, should be accompanied by copies of three recent testimonials and sent not later than 7th September to: H. A. MADGE, Secretary.

Weir Hospital, Weir Road, Balham,

S.W.12.

Applications are invited from registered medical practitioners (Female) for the appointment of a RESIDENT HOUSE SURGEON (B2), to be vacant at the beginning of September, including practitioners qualified more than three months and liable under the National Service Acts, 1939–41, when appointment is limited to six months. Salary is at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications, nationality, and present post, and accompanied by three recent testimonials, should be sent to the HON. SECRETARY SUPERINTENDENT.

Pontefract General Infirmary and

THE HYDES HOSPITAL. (112 Beds.)

Applications are invited from registered medical practitioners, Male, for the appointment of a HOUSE SURGEON (A), to become vacant immediately, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months. Salary £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to—

D. J. RICHARDS, Secretary-Superintendent.

City of Manchester.

CRUMPSALL HOSPITAL. (1400 Beds.)
(Recognised under the Regulations for the F.R.C.S.)

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER (A).

Applications are invited from registered medical practitioners, Male and Female, for the above-mentioned post which will become vacant on 24th September, 1942, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months; otherwise for twelve months. The basic salary for the appointment is £200 per annum or, to a practitioner within three months of qualification as above, £125 per annum, with board, residence, and laundry in addition. A temporary cost-of-living wages award is payable in addition to the foregoing salaries. The appointment is subject to the Manchester Corporation conditions of service.

Full information and forms of application may be obtained from the Medical Officer of Health, Hospitals Administration Section, P.O. Box No. 399, Town Hall, Manchester, 2, and applications for the post must be received by him not later than 26th August, 1942.

Canvassing in any form is prohibited.

R. H. ADCOCK, Town Clerk.

Town Hall, Manchester, 2, 7th August, 1942.

Royal South Hants and Southampton

HOSPITAL, SOUTHAMPTON. (255 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointments of:—

RESIDENT SURGICAL OFFICER (B1), to become vacant on 7th September, 1942. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply. Salary is at the rate of £300 per annum, with full residential emoluments. The appointment will be for a period of twelve months.

HOUSE SURGEON (A), now vacant, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41. The appointment is for a period of six months. Salary is at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent not later than 31st August, 1942, for Resident Surgical Officer, and immediately for House Surgeon, to—

EDWARD L. WIRGMAN, House Governor.

Hull Royal Infirmary.

Applications are invited from registered medical practitioners, Male and Female, for the following appointments at the MAIN and/or SUTTON BRANCH HOSPITALS:—

SENIOR HOUSE SURGEON (B1), vacant August. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply. Salary is at the rate of £225 per annum, with full residential emoluments.

SECOND HOUSE SURGEON (B2), vacant July. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply when appointment is limited to six months. Salary is at the rate of £200 per annum, with full residential emoluments.

Both the above posts are recognised for the F.R.C.S. examinations.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of recent testimonials, should be addressed to: R. J. CARLESS, House Governor.

The Jessop Hospital for Women,

SHEFFIELD.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (B2), to become vacant on 1st September. Applications from male R practitioners who have been qualified more than three months cannot be considered unless they have been rejected by the R.A.M.C. If held by a practitioner, male or female, who is liable under the National Service Acts, 1939–41, the appointment will be limited to six months. Salary at the rate of £100 per annum, with full residential emoluments.

Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

DAVID OSWALD, Superintendent and Secretary.

Bristol Eye Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of JUNIOR RESIDENT OPHTHALMIC HOUSE SURGEON (B2). Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply, when appointment is limited to six months. The salary is at the rate of £150 per annum with full residential emoluments.

Applications, stating age, qualifications with dates, nationality and present post, accompanied by three recent testimonials, should be sent as soon as possible to—

D. M. BABER, Secretary and House Governor.

Glamorgan County Council.

Applications are invited for the post of COUNTY MEDICAL OFFICER and SCHOOL MEDICAL OFFICER for the County of Glamorgan. Candidates must possess high medical qualifications and hold a Diploma in Public Health. They should preferably have held the post of Medical Officer of Health (or Deputy) in a County or County Borough; have had experience in hospital administration and the work included in the scope of a Public Health Committee, an Education Committee, a Public Assistance Committee and an Emergency Committee for Civil Defence purposes. The Medical Officer of Health may be required to take part in teaching in accordance with any agreement which may be made between the County Council and the Welsh National School of Medicine. Candidates must not be less than thirty and not more than forty-five years of age. The latter age may be relaxed in the case of a specially suitable candidate employed by a Local Authority. The post is superannuable and the appointment is subject to the successful candidate passing a medical examination. The salary offered is £1400 per annum inclusive, with travelling and personal expenses on the County Scales.

Further particulars of duties and terms of appointment may be obtained from the undersigned, to whom all applications must be sent, accompanied by copies of three testimonials, not later than 24th August, 1942.

Canvassing directly or indirectly will disqualify.

HENRY ROWLAND, Clerk of the County Council.

Glamorgan County Hall, Cardiff, 30th July, 1942.

City of Birmingham.

MATERNITY AND CHILD WELFARE DEPARTMENT.

The Public Health Committee invite applications from qualified medical Women to act as TEMPORARY ASSISTANT MEDICAL OFFICER at the CITY MATERNITY HOME, 134, Heathfield-road, Handsworth. The Home is a Second Certificate training school for midwives, with 40 Beds. Applicants should have had considerable experience in practical obstetrics. The work includes attendance at antenatal and children's clinics. The post is non-resident, and the salary scale is £500 rising by £25 annually to £700 per annum, plus bonus; the commencing salary within that scale depends on the medical officer's experience.

Applications, endorsed "Medical Officer for Maternity and Child Welfare" and accompanied by copies of three testimonials, to be made on a form obtainable from the MEDICAL OFFICER OF HEALTH, Council House, Birmingham, 3, and returned to him on or before 22nd August, 1942.

Nottingham and Midland Eye INFIRMARY.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (B1). Applicants should have had some surgical ophthalmic experience. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply. Salary at the rate of £200, with full residential emoluments.

Applications, stating age, nationality, qualifications, and experience, with copies of three recent testimonials, immediately to—

T. RUSSELL MOORE, Secretary.

The Ropewalk, Nottingham.

Burton-on-Trent General Infirmary.

Applications are invited from registered medical practitioners (Male) for the appointment of CASUALTY OFFICER and HOUSE PHYSICIAN (A), including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months. Salary at the rate of £150 per annum, with usual emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, to be sent to—

E. W. THORNLEY, Superintendent and Secretary.

Royal Western Counties Institution (FOR MENTAL DEFECTIVES), STARCROSS, DEVON.

Applications are invited from registered medical practitioners (Male) for the post of TEMPORARY MEDICAL OFFICER (B1). The appointment is whole time. Applicants should be exempt from liability for military service. Some previous experience of mental deficiency or psychiatry is preferable but not essential. Salary at the rate of 8 guineas per week, with apartments, board, and laundry.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of three testimonials, should be forwarded as soon as possible to the SECRETARY, The Royal Institution, Starcross.

The Duchess of York Hospital for BABIES, MANCHESTER. (80 Cots.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (A), including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, for six months from 1st October, 1942. Salary at the rate of £100 per annum, with full residential emoluments.

Applications, accompanied by copies of three recent testimonials, to be sent by the 24th August, 1942, to—

LOUISE GILLESPIE, Secretary.

The Children's Hospital, Sheffield (INC.) (157 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE PHYSICIAN (A) vacant 1st September, including practitioners within three months of qualification and liable under the National Service Acts 1939–41, when the appointment will be for a period of six months. Salary is at the rate of £100 per annum with full residential emoluments.

Applications, stating age, nationality, qualifications, and accompanied by three recent testimonials should be sent to the undersigned.

The successful applicant must be a member of a Medical Defence Society.

T. H. G. GARTLAND, Superintendent and Secretary.

Corporation of Aberdeen.

PUBLIC HEALTH SERVICES—BACTERIOLOGICAL DEPARTMENT.

Applications are invited for the post of ASSISTANT CLINICAL PATHOLOGIST to the Corporation of Aberdeen. The post is temporary for the duration of the war. The post is non-resident. For those with considerable experience in Clinical Pathology in its various aspects, the salary will be at the rate of £500 per annum, with annual increments of £25 on approved service to £700 per annum. The Conditions of Service shall be as laid down by the Corporation from time to time.

Applications, stating age and experience, and accompanied by four copies of three recent testimonials, should be submitted not later than Tuesday, 25th August, 1942, to—

HARRY J. RAE, Medical Officer of Health.

City Health Department, 4, Albyn-place, Aberdeen.

Leigh Infirmary, Leigh, Lancs.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT SURGICAL OFFICER (B1), to become vacant on the 1st October, 1942. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary is at the rate of £400 per annum, with full residential emoluments.

Applications, stating age, qualifications, and accompanied by copies of three recent testimonials, to be sent to—

B. R. CARTER, Secretary-Superintendent.

Victoria Hospital, Accrington.

Applications are invited from registered medical practitioners for the appointment of SENIOR HOUSE SURGEON (Male) (B2). Practitioners qualified more than three months and liable under the National Service Acts, 1939–41, may also apply when appointment is limited to six months. Salary £200 per annum, with full residential emoluments.

The appointment became vacant on 23rd July, 1942.

Applications should be sent as soon as possible to—

W. H. WARHURST, LL.B., Honorary Secretary.

Town Hall, Accrington.

Norfolk and Norwich Hospital, Norwich. (440 Beds.)

Applications are invited for the post of ASSISTANT PATHOLOGIST (full-time). Candidates must be registered medical practitioners with special experience in pathological work. Salary according to experience, but not less than £700 per annum.

Applications, with full particulars of experience, accompanied by copies of three recent testimonials, should be forwarded not later than first post on the 24th August to—

FRANK INCH, House Governor and Secretary.

King Edward VII Hospital, Windsor.

Applications are invited from registered medical practitioners Male and Female, for the appointment of a HOUSE SURGEON (A), to become vacant at the end of August, including practitioners within three months of qualification who are liable to service under the National Service Acts, 1939–41. If held by a practitioner who is liable under these Acts, appointment will be for a period of six months. Salary is at the rate of £120 per annum, with full residential emoluments.

Applications should be sent to the SECRETARY not later than 18th August, together with copies of recent testimonials.

Surrey County Council.

WARREN ROAD HOSPITAL, GUILDFORD. (General Hospital—450 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER (B1). The position will be available for approximately the further duration of the war, and is subject to one month's notice on either side. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply. Commencing salary according to experience at a point on the grade £350–£25–£450 per annum, plus full residential emoluments.

Applications to the MEDICAL SUPERINTENDENT.

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The County Council Hospital,
ST. PAUL'S HILL, WINCHESTER.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months; otherwise for one year. Salary is at the rate of £150 per annum, with full residential emoluments.

Apply to: THE COUNTY MEDICAL OFFICER, The Castle, Winchester.

Royal South Hants and Southampton
HOSPITAL, SOUTHAMPTON. (255 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of CASUALTY OFFICER (B2), now vacant. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply. The appointment will be for a period of six months. The salary is at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, nationality, qualifications, and accompanied by copies of testimonials, to—

EDWARD L. WIRGMAN, House Governor.

County Borough of Halifax.
THE HALIFAX GENERAL HOSPITAL. (400 Beds.)

RESIDENT MEDICAL OFFICER (B1) required for the above Hospital, a busy General Hospital having 6000 admissions in the year and with a staff of six full-time Medical Officers. The duties are almost entirely medical and the successful candidate will be the senior of two medical residents. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Candidates may be Male or Female, British or alien, and previous medical experience is essential. Salary £350–£25–£400 if resident, plus £150 in lieu of residential emoluments if non-resident, together with war bonus according to scale. In certain circumstances the commencing salary may be greater than the above.

Applications to be forwarded to the MEDICAL SUPERINTENDENT before 2nd September, 1942.

City of Salford.
INFECTIOUS DISEASES HOSPITAL.

Applications are invited from registered medical practitioners (Male or Female) for the appointment of ASSISTANT RESIDENT MEDICAL OFFICER (A), now vacant, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months; otherwise for one year and not renewable. The salary is at the rate of £200 per annum, plus a cost-of-living bonus, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of not more than three recent testimonials, should be sent to the Medical Officer of Health, 143, Regent-road, Salford, 5, Lancs, immediately.

H. H. TOMSON, Town Clerk.

West Cornwall Hospital, Penzance.
(184 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), to become vacant on the 14th September, 1942, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to—

K. I. NEWELL, Secretary-Superintendent.

Royal Eye and Ear Hospital, Bradford.
(94 Beds.)

HOUSE SURGEON (A) (Male or Female) wanted for 1st October. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may apply when appointment will be for six months. Salary £180 per annum, with board, residence, and laundry.

Applications, stating age, nationality, with copies of recent testimonials, to be sent to—

ERNEST S. HEAP, Secretary-Superintendent.

Royal West Sussex Hospital,
CHICHESTER. (334 Beds.)

Applications are invited from registered medical practitioners for the appointment of CASUALTY OFFICER (A), vacant on 1st September, including those within three months of qualification who are liable to service under the National Service Acts, 1939–41. The appointment will be for six months. Salary £120 per annum, resident. Apply not later than 17th August, 1942.

K. H. WILLIAMS, Secretary.

City and County of the City of Exeter.
CITY HOSPITAL (PUBLIC ASSISTANCE).

Applications are invited from registered male medical practitioners of over three years' standing in their profession for the post of MEDICAL OFFICER (B1) (temporary) of the above Institution. The hospital has been upgraded, and is included in the Ministry of Health's Medical Scheme. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply. The salary will be the rate of £800 per annum, non-resident, and the appointment will be for twelve months in the first instance, and thereafter at three calendar months' written notice on either side. Other things being equal, preference will be given to candidates with sound surgical experience and with experience in a similar appointment. Any fees received must be returned to the City Council. The successful candidate will be required to devote the whole of his time to the duties, and he will be on the staff of the Medical Officer of Health, from whom further particulars may be obtained.

An application form may be obtained from the undersigned, to whom it should be returned, together with copies of two recent testimonials, not later than 26th August, 1942.

C. J. NEWMAN, Town Clerk and Public Assistance Officer.
Exeter, 15th August, 1942.

University of Birmingham.
DEPARTMENT OF ANATOMY.

Applications are invited for the posts of TEMPORARY ASSISTANT LECTURERS IN ANATOMY (two vacancies). Each appointment will be for one year and will date from 28th September, 1942. Stipend £250–£300 per annum, according to experience. The posts are especially suitable for candidates wishing to read for higher degrees.

Applications should be accompanied by the names of two referees and sent by 31st August to: C. G. BURTON, Secretary.

University of Birmingham.
MENTAL DISEASE RESEARCH DEPARTMENT.

Applications are invited for the appointment of ASSISTANT to the Chief Research Officer. Histological experience essential. Preferably medically qualified. British. Salary £450 per annum.

Applications by 1st September to: C. G. BURTON, Secretary.

Wanted, a Qualified Lady Assistant
over thirty years of age for General Practice in Yorkshire. The duties will include part-time industrial work at a large chemical factory. Salary according to qualifications and experience—minimum £700 per annum.—Applications, with full particulars, to Address, No. 908, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Doctor, many years' experience of
Venereal and Skin diseases, seeking position, either private or in hospital.—Address, No. 905, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Wanted, South-West Country Practice,
near coast, about £1200 per annum. House on rental. Ample cash available.—Address, No. 910, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

For Sale.—Several Panel and Contract
PRACTICES. Incomes ranging from £1,500 to £3,000 per annum. Houses available.

RELIABLE LOCUMS required at twelve guineas per week.—GRIFFITHS' MEDICAL AGENCY, 30, Bridge Street, Newport, Mon.

For Sale, Panel and Private Practice
in small Midland town, £1700 per annum. Panel £940 per annum. House on rental. One year's purchase. Accept £1000 down and balance by arrangement.—Address, No. 909, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

For Sale, Medical Practice, Sheffield,
house to rent; Medical Practice, Leeds, house to rent; Partnership share, best suburb, Leeds, excellent house to rent. Practice, good Panel, excellent house to rent, near Rotherham; —NATIONAL MEDICAL AGENCY, 63, Great George-street, Leeds, 1. Grams: Natmedag. Phone: 21207.

Microscope, suitable for pathological
research work, with mechanical stage, triple nosepiece, 1/12th oil immersion, 1/6th and 2/3rd objectives, substage condenser, &c., urgently required. Binocular model preferred.—Please send details to: BOOTS PURE DRUG CO., LTD., Publicity Department, Station-street, Nottingham.

Private Home for Early Mental
ILLNESS, ideally situated on the Helford River, receives a limited number of patients for care and active treatment. Special department for Insulin Therapy.—Illustrated brochure from RESIDENT PHYSICIAN, Trenython, Mawnan Smith, Cornwall. Telephone: Mawnan Smith 276.

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